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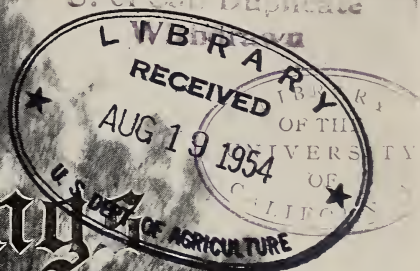
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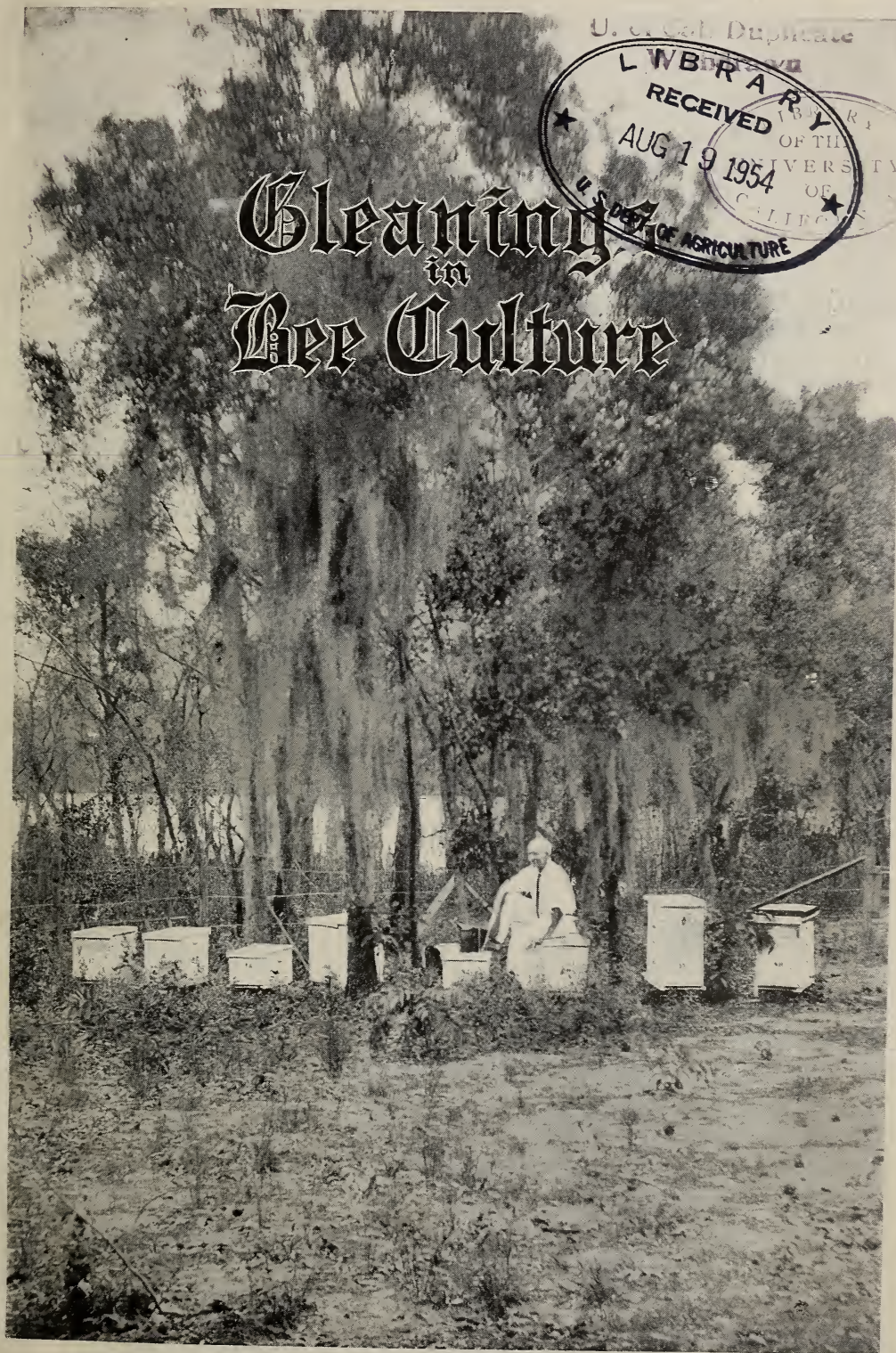


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# Cleaning in Bee Culture



Vol. XLIV

JANUARY 1, 1916

No. 1



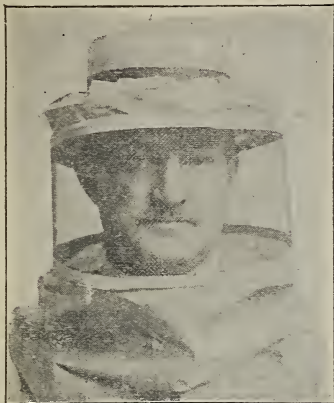
# Gleanings in Bee Culture Magazine Clubs for 1916

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(Devoted to progressive poultry culture in the Northwest.)

Because of additional postage required, these offers do not apply in Canada, in foreign countries, nor to residents of cities in which the magazines are published if extra postage is required to mail the publication to such subscribers.

## Gleanings in Bee Culture, Medina, Ohio



## THE IDEAL BEE-VEIL

Oftentimes when out in the yard working with the bees one stoops over to pick out a frame, and, as usual, bees keep buzzing around his head, watching for a chance to sting. The cloth veil which is often used sticks to the face when one bends over, and gives the bees an opportunity to sting. The IDEAL BEE-VEIL is constructed of cloth of wire, there being a cord at the top of the veil used to pull the cloth around the crown of the hat. The lower part also has a cord which fastens around the waist. The wire on the IDEAL veil does not strike the face, and prevents the bees from stinging. It can be readily seen that a veil of this kind has the cloth veil far outdistanced for comfort and utility. Sparks from the smoker do not burn holes in the IDEALS as in the netting veil.

The veil is manufactured by us, and is recognized by the best and largest beekeepers as the most practical veil on the market.

Red Catalog, postpaid. "Simplified Beekeeping," postpaid. Dealers Everywhere.

W. T. Falconer Mfg. Co. . . . Falconer, N. Y.

Where the good beehives come from.

## HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

GRADING RULES OF THE COLORADO HONEY-PRODUCERS' ASSOCIATION, DENVER, COLO.,  
FEBRUARY 6, 1915.

### COMB HONEY.

**FANCY.**—Sections to be well filled, combs firmly attached on all sides and evenly capped except the outside row next to the wood. Honey, comb, and cappings white, or slightly off color; combs not projecting beyond the wood; sections to be well cleaned. No section in this grade to weigh less than 1 ½ oz. net or 13 ½ gross. The top of each section in this grade must be stamped, "Net weight not less than 12 ½ oz."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

**NUMBER ONE.**—Sections to be well filled, combs firmly attached, not projecting beyond the wood, and entirely capped except the outside row next to the wood. Honey, comb, and cappings from white to light amber in color; sections to be well cleaned. No section in this grade to weigh less than 11 oz.

net or 12 oz. gross. The top of each section in this grade must be stamped, "Net weight not less than 11 oz." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

**NUMBER TWO.**—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 oz. net or 11 oz. gross; also of such sections as weigh 11 oz. net or 12 oz. gross, or more, and have not more than 50 uncapped cells all together, which must be filled with honey; honey, comb, and cappings from white to amber in color; sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 oz." The front section in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

*Comb honey that is not permitted in shipping grades*

Honey packed in second-hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured, or patched-up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells, or a less number of empty cells.

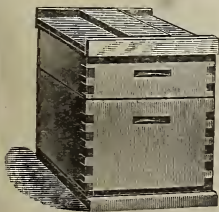
Sections weighing less than the minimum weight.

All such honey should be disposed of in the home market.

### EXTRACTED HONEY

This must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained, and packed in new cans; sixty pounds shall be packed in each five-gallon can, and the top of each five-gallon can shall be stamped or labeled, "Net weight not less than 60 lbs."

Extracted honey is classed as white, light amber, and amber. The letters "W," "L A," "A" should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new substantial cases of proper size.



Early-order Discounts will  
**Pay You to Buy Bee Supplies Now**

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. . . . Write for our illustrated catalog and discounts today.

Leahy Mfg. Co., 95 Sixth St., Higginsville, Missouri



## STRAINED HONEY

This must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained; and, if packed in five-gallon cans, each can shall contain sixty pounds. The top of each five-gallon can shall be stamped and labeled, "Net weight not less than 60 lbs." Bright clean cans that previously contained honey may be used for strained honey.

*Honey not permitted in shipping grades.*

Extracted honey packed in second-hand cans.  
Unripe or fermenting honey weighing less than 12 lbs. per gallon.

Honey contaminated by excessive use of smoke.

Honey contaminated by honey-dew.

Honey not properly strained.

## NATIONAL BEEKEEPERS' ASSOCIATION GRADING RULES

*Adopted at Cincinnati, Feb. 1913.*

Sections of comb honey are to be graded: First, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

## I. FINISH.

1. *Extra Fancy*.—Sections to be evenly filled, combs firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. *Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than six unsealed cells on either side exclusive of the outside row.

3. *No. 1*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. *No. 2*.—Combs not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

## II. COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

## III. WEIGHT.

1. *Heavy*.—No section designated as heavy to weigh less than fourteen ounces.

2. *Medium*.—No section designated as medium to weigh less than twelve ounces.

3. *Light*.—No section designated as light to weigh less than ten ounces.

In describing honey three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example: *Fancy, white, heavy (F-W-H)*; *No. 1, amber, medium (1-A-M)*, etc. In this way any of the possible combinations of finish, color, and weight can be briefly described.

## CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour or "weeping" honey; sections with comb projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than ten ounces.

INDIANAPOLIS.—This market is well supplied with honey, especially comb honey. With the approach of holidays the market usually shows a lack of vitality. No. 1 choice white comb is selling at \$3.75 to \$4.00 per case; No. 2 white comb, \$3.50 per case. Extracted honey is bringing 9 to 11 cts. We are offering 28 cts. cash or 30 in trade for good average wax delivered here.

Indianapolis, Dec. 18. WALTER S. POWDER.

ALBANY, SCHENECTADY.—There is but very little demand, and we look for a quiet market during January. The usual retrenchment, after the rush and gift-buying during the holidays may be expected. Lower prices will not induce buying, as merchants are taking account of stock, and add only what is necessary.

CHARLES MACCULLOUGH.

Albany, Schenectady, Dec. 22.

CHICAGO.—Trade in honey is quiet. Retailers having loaded up for the holiday season, there will not be much of a call before the middle of the coming month. Prices are without material change, ranging at 15 to 16 for the two highest grades; 12 to 13 for the ambers. Light-weight sections are preferred when well attached to the wood. White extracted ranges from 7 to 9, according to kind and condition; but very little of it is selling at over 8 cts. in a small way. Large lots can be bought at lower prices. Amber grades range at from 5 to 6, with some high-flavored and desirable lots at 7 cts. per lb. Beeswax brings 28 to 30.

Chicago, Ill., Dec. 18. R. A. BURNETT & Co.

ZANESVILLE.—Considering the proximity of the holidays, when usually the demand for honey begins to slacken, the market condition is fairly satisfactory, and the better grades are moving pretty well. Prices remain about as per previous quotations. Choice to fancy grades sell in single-case lots at \$4.00 to \$4.25; lighter weight and inferior grades correspondingly lower, with usual discount to the jobbing trade. Best grades of extracted are selling at 9 to 11, according to quantity, with the supply about balancing the demand. Twenty-eight cents cash, thirty in trade, are ruling prices for wax as received first-hand from producers.

Zanesville, Dec. 20. E. W. PEIRCE.

*Honey reports continued on page 5.*

## Special Extra....Automobile Bargain

We offer our 4-cylinder 35-horse-power covered-top delivery automobile in perfect order. Cost \$1500; will sell for 750. Capacity 1500 lbs. Just the thing for a farmer, dairyman, or grocery delivery. If interested, write for more particulars, as the party buying will get a bargain.

The Fred W. Muth Co., 204 Walnut Street, Cincinnati, Ohio  
"The Busy Bee Men"

# NOW IS THE TIME

To order your supplies, and thus  
have every thing in readiness for  
the spring besides saving 3 per cent

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We carry a full line of Root's Goods at all times, and are always prepared to fill any and all orders on short notice.

Hives, supers, frames, sections, comb foundation, section-presses, foundation-fasteners, queen-excluders, queen and drone traps, swarm-catchers, feeders, honey and wax extractors, capping-melters, honey-knives, honey-tanks, honey-packages, shipping-cases, bee-escapes, bee-veils, bee-gloves, bee-brushes, smokers—in short, everything the bee-keeper requires for the proper conduct of an apiary.

---

C. H. W. Weber & Company, Cincinnati, O.

2146 Central Avenue

## The Prospect for 1916 is Very Good

---

It would be wise to be one of the beekeepers who are now ordering supplies for another season; besides, there is a discount for January of 3 per cent and February of 2 per cent. Send us a list of goods required and we shall be glad to quote you prices if you have no catalog. Catalog will be sent only on request. Our stock for season of 1916 is now here, and we can fill orders pretty promptly. We carry a full line here at Syracuse; and by ordering from here you will save time and freight. Goods will arrive in better condition on short hauls. Better make out a list before you forget it.

---

F. A. Salisbury, Syracuse, N. Y.

1631 West Genesee Street

# Gleanings in Bee Culture

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*Honey reports continued from page 2.*

ST. LOUIS.—There is no change in the honey market since our last quotations. The supply of both comb and extracted honey, while not large is quite sufficient for the present demand. We are still quoting white comb honey in 24 sections from \$3.50 to \$3.75; amber, \$2.75 to \$3.00; dark and inferior, less. Extracted honey in 60-lb. cans from 6 to 9, and in barrels from 5½ to 6½, according to quality. Beeswax is firm at 28½ for pure; inferior and impure, less.

R. HARTMANN PRODUCE CO.

St. Louis, Dec. 20.

### Kind Words

GLEANINGS READ BY PRISON INMATES.

Our exchange list has grown to such an extent we were sure it needed revising, so we sent out a circular letter and a card to all exchanges on our list of which we were at all uncertain. All they have to do if they wish the exchange continued is to return the card we have sent, indicating that they are interested in GLEANINGS.

The card below is one which came from the *Star of Hope*, the paper published by the prisoners of Sing Sing Prison.

STAR OF HOPE, Inmates Sing Sing Prison, 354 Hunter St., Ossining, N. Y.

After the editorial office is done with the magazine we loan it to inmates interested in the subject; and after they have read it we send it successively to Auburn Prison, Great Meadow Prison, and Clinton Prison, where it is loaned to interested inmates until it is worn to shreds.

H. HUFFMAN BROWNE, Editor-in-Chief.

MAPLE SYRUP, BEES, POTATOES, AND "AX-HELVE."

A. I. Root's talks about maple syrup and sugar in *Our Homes* made me think it would, perhaps, be interesting to you to see how we make syrup and sugar each spring. I have made maple syrup about 40 springs out of my life of 58 years, and know it is just as healthy to make it as it is to eat it. I certainly enjoy both. My quarter-acre yielded 74 bushels of nice potatoes. This kind of potato was raised from seed of the Early Rose. They are the earliest potato I ever had. The bees did quite well this year in spite of cool rainy weather throughout the summer. I extracted 150 gallons, and had about 300 lbs. of comb honey from 35 swarms, spring count.

One of my side lines is hand-shaved ax-helves. This line goes well with beekeeping in my locality. One winter I made 82 dozen for the Wisconsin Timber and Land Co., of Mattoon. There are hundreds of acres of cutover lands in this locality where raspberries abound.

Mattoon, Wis.

A. V. POLLOCK.

KIND WORD FROM A SOUTH AMERICAN MISSIONARY.

Dear Bro. Root:—Your tract, "How to be Happy when People Abuse You," came to me with some sample tracts from California recently. I received a great blessing from the tract.

I should like to say I have known you since I was a little boy, as I grew up in Chippewa Lake, attended school in Medina, and saw your plant grow to the proportions it is now; and I know it is because you were true to God.

I learned to dance, play cards, smoke, etc., and would not yield my life to the Lord, although he called me many times.

On account of smoking I became so nervous I could not sleep at night—made one or two trips to Chippewa to end my life by my own hand. I was so nervous I could not do so, the Lord holding me because of prayer. I was saved May 10, 1900, since which time, excepting the first year, I have been preaching the gospel, six years of the time in South America.

The Lord has wonderfully blessed me, and given me many souls in this time, as my calling is that of an evangelist.

Let me say I always love to read your bee journal for the good religious articles you put in it; and I pray that God may wonderfully bless your last days.

EARL W. CLARK.

Washington, D. C., Oct. 23.

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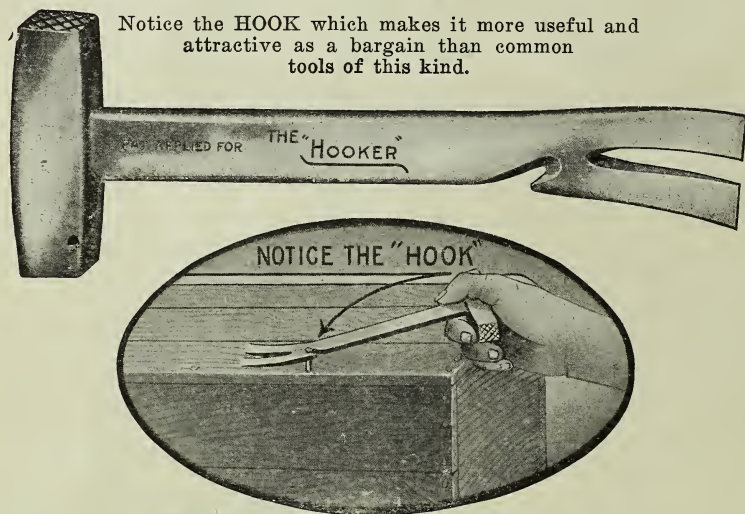
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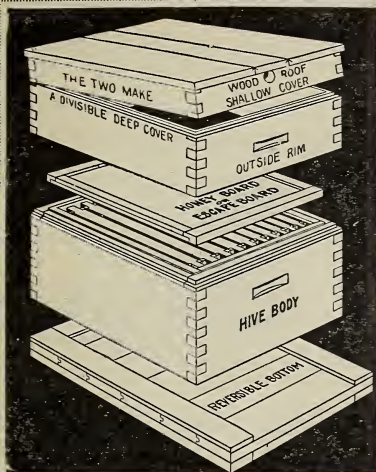
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## Gleanings in Bee Culture, Medina, Ohio





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ALLEN LATHAM.

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Manufactured into  
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on shares. Write for special prices.  
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(Weed Process)

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Apiaries, Glen Cove, L. I.

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I also have some nice grade Vermont  
Pure Maple Syrup which I can offer at  
\$1.25 per gallon, f. o. b. my station.

Robert G. Coombs  
Guilford, Vt.

## LOS ANGELES HONEY CO.

633 Central Bldg. . . . Los Angeles, Cal.

Buyers and Sellers  
of Honey and Wax

Write Us for Prices when in the Market

## Candy for WINTER STORES

Why not be sure your bees have enough for winter by  
giving each colony one or two plates of candy? We have  
it in large paper plates weighing about two pounds, enough  
to last a colony three or four weeks. Can be sent by post.  
Write for prices, also catalog of supplies.

H. H. Jepson, 182 Friend St., Boston, Mass.

**BEE SUPPLIES** Send your name for new 1916  
catalog out in January.  
Dept, T, CLEMONS BEE SUPPLY CO.,  
128 Grand Ave., Kansas City, Mo.

# January Discount for Cash Orders

. . is 3 per cent . .

This is the best season of the year for buying  
Chaff and Dovetailed Hives and Supers . . . .

28 cts. cash and 30 cts. in exchange for goods for average  
beeswax delivered to Lansing. Turn your beeswax into  
money or the supplies you need for the coming season.

Christmas orders for "Gleanings" and "A B C and X Y Z of Bee Culture." "Gleanings  
in Bee Culture," \$1.00 per year; "A B C and X Y Z of Bee Culture," \$2.00; both the  
book and the journal for \$2.50, and mailed to separate addresses if desired.

M. H. Hunt & Son, 510 N. Cedar St., Lansing, Mich.

# When You Think of Bee Sup- plies, Think of Indianapolis

We Sell Root's Bee Supplies  
---the Goods that Satisfies....

Indications just now are very favorable for a good season next year. A good season means an excessive demand for Root's goods at Root's prices. By ordering now you will receive your goods promptly, also save the cash discount for early orders, which is three per cent in January, and you can put them together in your spare time.

If you are interested, and it is your intention to order your supplies before goods are really needed, just try placing a trial order here. We are quite sure you will continue with us year after year. Some, of course, never buy supplies till after they are needed. But the men who are most successful are preparing *right now* for next season.

We allow you 30 cents a pound in trade for good average beeswax delivered here.

Finest extracted honey in five-gallon cans ready for immediate shipment. Write for quotations.

Walter S. Pouder, Indianapolis, Ind.

873 Massachusetts Avenue



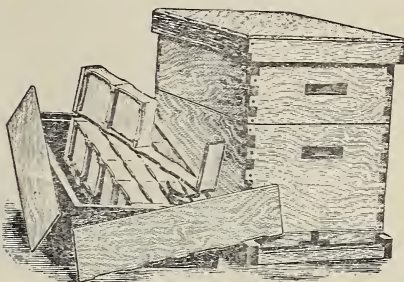
# The Double-walled Massie Bee-hive

Surest Protection for Bees---Increased Supply of Honey---the Best Hive for any Climate



The Massie Hive for Comb or Extracted Honey

Furnished in the clearest of lumber, in either Cypress, White Pine, or redwood; all brood and extracting frames are made from White Pine.



The Dovetailed Hive for Comb Honey

THE VENTILATED BOTTOM admits fresh air into the hive, lessening the chance for swarming, and gives renewed energy to the bees. It is also equipped with a feeder without extra cost. Fifty years in the bee-supply business has shown us that the MASSIE is THE VERY BEST HIVE, and testimonials to this effect are received daily from those who are using this hive.

Why not give us a trial order?  
Satisfaction fully guaranteed.  
Early Cash Order Discounts..

We are also extensive manufacturers of DOVE-TAILED HIVES and all other apiarian supplies. If you are in the market for supplies be sure to get our prices before buying elsewhere. We will mail our large illustrated catalog and SPECIAL price list to any one upon request.

KRETCHMER MFG. CO., 1000 3d St., Council Bluffs, Ia.

## "Next Door to Everything"

reads the advertisement of a great railway terminal. "Next door to everything in Beedom" fittingly describes our location. In the bee-supply business, distance is measured, not in miles but in hours and minutes; and the house that gives first service is nearest the beekeeper.

Tho but a short distance from the geographical center of Ohio we are yet so near to West Virginia and Pennsylvania, and so closely connected by transportation lines, that we are truly "next door."

Some idea of our importance as a distributing center may be gained from the fact that more than fifty mails arrive and as many depart daily, and almost a hundred freight and express trains enter and leave the city every twenty-four hours.

Then our location in the city is most accessible. Our office and warehouses are just off the main business thoroughfare, in the heart of the wholesale district, and only a stone's throw from depots, post-office, and the large retail stores. Beekeepers and their friends are earnestly invited to make our store their headquarters when in the city.

The best goods and service justify us in promising our customers the fullest measure of satisfaction.

January cash orders are subject to a special discount of 3 per cent off catalog prices. Clover looks most promising for the coming season, and it is the part of wise foresight to prepare carefully the bees for winter, and anticipate all possible requirements.

E. W. Peirce,

22 So. Third St.

Zanesville, Ohio

## The Eyes, Ears, and Mouth are Near Together

To see birds, hear their music, and taste honey are a happy trio.

There is a new and enlarged  
Bird Department  
in the  
Guide to Nature

Send twenty-five cents for a four-months' trial subscription

Address: ARCADIA, Sound Beach, Conn.

Many have stated that the 1915 Lewis Catalog was by far the best bee supply catalog ever issued.

The New Lewis 1916 Catalog is still better than the 1915 edition particularly in the illustrations, most of which will be found to be entirely new and of the finest work the engraver is able to produce in this line. As in previous editions, all descriptions and lists of prices are comprehensive and very plain.

This new Lewis 1916 Catalog is now out. If you have not been receiving the Lewis Catalog annually send in your name at once and we will see that you get your copy promptly.

G. B. Lewis Company . . Manufacturers of  
Lewis Beeware . . . Watertown, Wisconsin

## DADANT'S FOUNDATION

### Early-order Discounts on Dadant's FOUNDATION

Send us a list of the bee-supplies and foundation you will need for 1916, and we will gladly quote you our best prices. It will pay you to buy early.

**BEESWAX.**—We buy beeswax the year round and pay highest cash and trade prices. Light yellow wax from cappings is especially wanted. Your **BEESWAX** worked into foundation at moderate rates.

**NOTE** Old combs, cappings, and slumgum rendered on shares. Send for our terms. We will get all the wax and save you a "mussy" job.

**DADANT & SONS**  
HAMILTON, ILLINOIS

DADANT'S FOUNDATION

DADANT'S FOUNDATION



# GLEANINGS IN BEE CULTURE

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JANUARY 1, 1916

NO. 1

## EDITORIAL

OUR apologies are due to our readers for allowing the Dec. 15th issue to be a little late. The only explanation we have to offer is the extra number of pages and the very complete index, comprising 3737 references. This issue is likewise delayed for the same reason. If our readers will use this index as they should we feel sure they will pardon the delay.

### In the Shade of the Spanish Moss

OUR cover picture in this issue shows a part of the apiary of Harry Hewitt, Apopka, Florida. The bees in Lakeside apiary enjoyed a good flow from orange blossom, but since that time the proprietor has had to feed forty pounds per colony to keep the colonies alive. He hoped to get enough from partridge pea to carry them through the winter.

Forest fires in April took all the palmetto, gallberry, and red-bay pasture.

### Prominent Wisconsin Beekeeper Dies

IN recording the deaths of prominent beekeepers we have seldom found it necessary to make mention of a death so sudden as in this present instance. On Thursday, Nov. 25, Mr. H. C. Ahlers, who had just returned from a hunting-trip in the northern part of the state, had a severe hemorrhage, from which he did not rally, his death taking place at his home in West Bend the following day.

Mr. Ahlers was an extensive beekeeper, having four or five out-apiaries, and he made a specialty of selling honey direct to the consumer. He also sold bees and queens from his best honey-producing strains. It was only in November that he advertised for a helper in his beeyards for the coming year.

GLEANINGS extends sympathy to the bereaved wife and daughter.

### Honey Post Cards.

AT the New York State meeting a year ago a publicity committee was appointed to consider the ways and means for improving the honey market, which committee was held over this year. Some time ago the State Association got up a writing-tablet with illustrations, information, etc., regarding the honeybee. This publicity committee is now contemplating putting out post cards with snappy designs and pictures, tending to call attention to honey and educate the public concerning it.

In order to secure designs, prizes are being offered for sketches—\$15.00 for the first prize, \$10.00 for the second, and several more prizes of \$5.00 each. Correspondence is invited. Address F. Greiner, Naples, N. Y.

### The Quebec Beekeepers' Association

WE have just received a full manuscript copy of the secretary's report of the latest meeting of this society, held in Montreal Nov. 10 and 11. This report is all in the French language, as were also the discussions themselves. Lack of space alone prevents a full translation and presentation of the report, altho much of it relates to the mere routine work of the society. As a whole, however, it shows great activity on the part of our beekeeping friends in that far-north country. There were present a great many officials connected with the provincial government, and, in fact, from most of the higher educational walks in life, which is certainly an encouraging feature.

We note that Dr. Pilon gave an interesting talk on the advantage of bees to agriculturists in general, saying he was convinced of the necessity of bees for pollination of fruit.

As a copy of this report can be had, probably, for a nominal sum, we would advise all our readers who understand

French to send to the secretary, Oscar Comire, Abenakis Springs, Quebec, and get a copy.

### That Record-breaking Car of Honey

ON page 832 of our issue for Oct. 15 we mentioned the fact that Mr. William Lossing, of Phoenix, Arizona, was loading the biggest car of honey that was ever recorded. He crowded into that car 646 cases, or a total of 87,589 lbs. As the average car does not go much above 40,000 lbs., we raised the question whether our correspondent was not overdoing it by piling the cases, as we supposed, clear up to the ceiling and thus putting an enormous pressure on the cases below. He comes back at us as follows:

*Mr. Editor:*—Some time ago I wrote you about a large car of honey I was loading—so big a car that you thought I was overdoing it. Well, that part is quite natural for easterners who are not accustomed to western ways, especially in Salt River Valley, where milk and honey flow in large quantities.

As per your request I wish to make another report on the big car which you imagined was filled to the top. Why, it was only three tiers deep the full length of car, and four tiers at either end. Each single tier was ten cases wide. When this car arrived at its destination it was reported that they never heard of such a big car, and that it got thru all right. Well, the next four cars were loaded as follows: 644 cases, 633 cases, 444 cases, and 457 cases. I will load two cars this week with over 500 cases in each. While I would not advise loading to the roof of a car as you feared, I deem it perfectly safe to load at least four tiers high if so desired, as, when cases are properly loaded six or seven tiers high, they cannot break down.

Our usual way of loading is lengthwise, cases packed close both ends and sidewise. I have my first loss yet to come when loaded as above, and I have been shipping for some nine years. So far this year I have produced 4100 cases, which is not over half of what is produced in Maricopa County, as we have between 22,000 and 23,000 colonies in this county, and no foul brood.

Phoenix, Ariz., Nov. 22.

WM. LOSSING.

We take it all back, friend Lossing. You Westerners often do things on a big scale. The fact that the cars were large in proportion to the load they were carrying shows that you were not taking the risk we had supposed.

### The Amount of Stores Necessary for Good Wintering Outdoors

ELSEWHERE in this issue, page 9, Mr. J. L. Byer, commenting on our statement that less stores are needed in the North than in the South, says:

"As we are further north than Ohio, on the same basis of reckoning we should require even less honey than they do in Ohio. But I wonder where the producer here in Ontario lives who would trust his colonies

outdoors to go into winter quarters with stores aggregating but 20 pounds, combs included."

It would hardly seem to us that bees in Ontario would require less stores where they have a longer period of confinement than in Ohio. Indeed, the very reverse would be true. In our locality (and that represents most northern localities south of the Great Lakes) 20 lbs. of good sealed stores is enough to carry the bees thru from November till the middle of April, or even to the beginning of May. Our bees fly as late as December 1, and as early as the first of March. By April 1 or 15 they gather some natural pollen and nectar from the soft maple. From April 15 to May 10 they gather considerable honey from dandelion and fruit-bloom. Mr. Byer says that in his north yard he has heavy snowfalls as a rule, and this yard is never visited by him from late fall till early spring. Reports from other Ontario beekeepers show that bees may be confined five months without a flight. Such continuous cold and severely cold weather would cause a larger consumption of stores than a milder cold. When it is so cold, indeed, that bees have to go into a state of activity, as Dr. Phillips has described in Bulletin 695, they begin exercising, and activity means consumption of stores. We proved that, in our observation hive, the colder the weather, the more the bees consumed.

But there is another very important point overlooked by our correspondent. Bees in the South consume more stores because they will rear brood more or less *all winter*, while those in the North will do so under normal conditions only toward spring. On this point there would not be much difference between Ohio and Ontario.

Taking it all in all, the inference of Mr. Byer, that bees in Ontario would consume less stores than here in Ohio, is hardly warranted. The facts are, and Dr. Phillips' bulletin, from a theoretical point of view, proves it, that, in a mild cold, bees will consume less stores than where it is colder or warmer. When the temperature outside of the cluster is 57 F., the bees actually consume less than when it is higher or lower. See Farmers' Bulletin 695 reviewed on page 876, Nov. 1st issue. Bees in Ohio consume less stores because the winter temperature is more favorable, and the winter is shorter, so that they can gather nectar and pollen a month or six weeks earlier than Mr. Byer's bees. Thus we have a distinct advantage in smaller consumption.

Mr. Byer says he himself would require from 40 to 50 lbs. of stores, and Mr. Sib-



bald uses 70 lbs. The former, at least, says he prefers honey to syrup. Good extracted honey in Ontario sells at about 10 cts., and according to that it costs between four and seven dollars for stores to carry Ontario colonies thru winter. This does not include the cost of the investment, winter cases, and putting bees into winter quarters and the labor of unpacking. Does not Mr. Byer make some mistake? The cost of between five and eight dollars for winter stores would seem to be an excessive burden on the business. No wonder some of the beekeepers of Ontario are thinking that it would be cheaper to brimstone in the fall, and buy bees in pound packages from the southern states. It certainly would, at this rate.

Mr. Byer by inference made a statement (see p. 905, Nov. 1) that too much packing during winter was too much of a good thing. Is it not true that he and some of his fellow beekeepers would save stores by using more packing instead of less?

### Do Bees Perish During Winter when their Hives are Completely Covered with Snow for Long Periods of Time?

In the same department Mr. Byer takes issue with our statement made to a correspondent, "When hives are completely covered with snow for several months it is enough to kill any bees." He said he used to think that way; but he has changed his mind. Some of his bees at the north yard he declares remain covered with snow for three months or more, and yet he has had perfect wintering. At this yard he used upward absorbents—no sealed cover.

Mr. Byer has two conditions that contribute to good wintering in his yard—namely (1), a cold atmosphere during which the snow does not melt as it does in Ohio, run in at the entrance, and then freeze; and (2) upward ventilation. We have a great many thaws in our climate. The snow becomes dense and soggy, and sometimes the ice hermetically seals the entrances. We use on the hives thin boards that are not sealed down. As others in our climate have similar conditions it would be a little dangerous to allow the statement to go out that bees in hives completely covered with snow are always safe. That depends on the climate and conditions. We have had many reports showing where colonies buried under snow died because either the entrances were sealed with ice or banked up with snow that had partially melted and frozen.

We have been in Canada during mid-

winter, and found the atmosphere is decidedly colder and dryer than south of the Great Lakes—at least south of Lake Erie. The snow is light and fluffy in northern Ontario, and such snow can cover hives to the depth of a foot or more, providing the climate is dry and cold.

### A Look into 1916

THIS is not an ad. The advertisement appears on the back inside cover page; but by these paragraphs we hope to make a few further suggestions from an editorial point of view regarding our special numbers for 1916. Curiously coincident with the editors of a number of other magazines, we decided this year to give the main attention to matters commercial rather than professional. We are going to talk a lot about selling.

The first July issue is the special on advertising. We are gratified to announce that we have secured the promise of an article or articles from a man who is possibly the best authority on advertising honey in this country. He is the head of an advertising agency distinguished by unique achievement and unusual growth. Altho he has had charge of the only national advertising campaign ever carried out for honey, probably few beekeepers know him, simply because his attention has been toward selling and not producing. We allude to Mr. W. C. D'Arcy.

We shall also present articles on exhibits at fairs and food shows, newspaper and direct by mail advertising, and other means of publicity. We hope for this issue, as well as all the others, that honey-producers who have had experience with advertising in any form will state it for the benefit of their fellow beekeepers.

The marketing-honey number, the first August issue, will deal with matters of a similar nature, with the emphasis upon selling. From a dollars-and-cents point of view we hope to make this the most practical in 1916. We look for articles on local sales, whether by canvassers or thru stores, and distribution by jobbers. We expect to have some straight talk on co-operation as well.

The March 1 buildings number is sure to interest everybody. Send in the plan of your extracting-house or workshop, with a description accompanied by specifications and photographs, if possible. Labor-saving arrangements of equipment will be especially interesting.

The first May number is the special on out-apiaries. Large-scale beekeeping has

been featured before; but there is always so much new and valuable information coming up all the time that there are plenty of new things to be said about out-apiaries. If you have one, tell us so. Details on which we wish contributions are specified in a paragraph in advertisement elsewhere.

It may be that wax is a side line with you, very much aside. And yet there are profits in beeswax, especially for the man whose freights on comb and extracted honey are high. In fact, we have had several inquiries of late about whether it would be possible to run bees for wax primarily, and make honey a by-product. What do you think? And how would you go about it? This will be the meat of the June 1st number, the special on wax production.

Just as we have done in former years, we chose these special topics from suggestions which our readers have obligingly sent us during the past year. While a considerable number of articles are already on hand, there is plenty of room for more good ones.

### Government Data on Wintering in the United States; Causes of Winter Losses.

Bulletin No. 325, of the United States Department of Agriculture, among other things, concerns itself with wintering. The data were secured from 650 honey-producers in 42 states, covering 80,000 colonies of bees. These reports came mainly from the best honey-producers; and the presumption is that the averages show up better than if returns were taken from beekeepers from all over the United States. Some interesting data have been secured; and among them, briefly summarized, are the following:

The average quantity of honey for stores reported in the hives at the beginning of winter is in excess of what is usually considered to be necessary to carry a colony from one honey-flow to another. As every up-to-date honey-producer will be on the safe side, he will put in more than enough. Those who report belong to this class. The figures show 32 lbs. per colony for the United States when 25 lbs. are usually considered enough.

We estimate that bees in the South require more stores than those in the North, for the simple reason that brood-rearing in some of the more southern places may go on every month in the year. But a study of the tables shows that there is but very little variation between the food supply, either north or south. This may be and

probably is accounted for by the fact that bees in the North are confined in their hives for a long period of time without flight. This causes more or less bowel disturbance, and toward spring a large consumption of stores, thus aggravating the trouble until dysentery pulls the colony down.

As would naturally be expected, the reports show that winter protection varies according to the latitude north or south.

Winter losses range from 15 to 20 per cent in the more northerly states, and from 5 to 15 in the more southern. The cause of winter losses is usually thought to be missing or worn-out queens. A considerable percentage of the reports failed to state the cause of death, and it is believed that the heaviest mortality is due to starvation.

In the line of honey-yields, the July 1st honey report indicates that the honey season had been late from one to three weeks over most of the country, due to the cold and generally wet weather. The average of surplus honey up to July 1, 1915, was estimated at 18.3 lbs. as against 20.7 for the preceding year. Taking the country as a whole, this amount, however, is only about 50 per cent of the total crop for the entire season, estimated up to Sept. 1. On that basis the average would be twice as large, or 36 and 40 lbs. respectively. The yield from the small apiaries, especially of the backlotter and of the up-to-date farmers would be higher than that from the large apiaries.

The northern states, with the exception of Illinois, Wisconsin, and Nebraska, show that a high proportion (from a half to two-thirds) of their production is in the form of comb honey, while in the South and West generally it is only from a third to one-half of all.

Reports show that 60 per cent of the honey removed from the hives is consumed locally. However, more than half is shipped out of Vermont, New York, Florida, Kentucky, Louisiana, Texas, Wyoming, Colorado, New Mexico, Arizona, Utah, Idaho, and California.

California is estimated to furnish about a fourth, and Texas one-eighth of practically all the extracted and comb honey produced in the United States. If the figures from all the producers could be secured we believe that the two states mentioned are credited full high.

Copies of the bulletin above referred to can be obtained of the Superintendent of Documents, Washington, D. C., for 5 cents.

An editorial in the second January issue will discuss data from this bulletin on honey imports and exports.



Dr. C. C. Miller

## STRAY STRAWS

Marengo, Ill.



VON MORALEC, a French artilleryman, made the first drone-trap, according to *Deutsche Bienenzucht*, 172.

GRACE ALLEN, I like you—first rate—but I won't like your "favorite apiarian attitude," p. 968.

True, it's as good as sitting on a "wiggly hive-cover," but why not take a decent seat?

J. E. CRANE advises, p. 986, that in a case of European foul brood the colony have a cessation of egg-laying for two or three weeks. Will not ten days do, leaving the colony stronger?

BEEN "rasslin'" with grip for nearly a month, and cough hardly any now. Thankful it didn't come two months later, for I want to get to that convention at Chicago, Feb. 22. You goin'? [Expect to.—Ed.]

F. J. LEE, p. 997, the editor has sized the thing up about right as to light in the cellar. My bees in cellar, having air the same as outdoors, will stand full light for weeks; but later on light is bad, and fastening in hives would be disastrous.

Now is a good time to ask your grocer to save you some cork-chips that come in kegs of grapes. Then to make the finest drinking-place for your bees, all you have to do next spring is to put water in a tub, pail, or half-barrel, and throw the cork upon it.

A. I. ROOT is asked, p. 1001, to preach sunshine for the babies. Sunshine outdoors is all right, but not in the house. Fashion dictates that the window-shade must be pulled down to just such a height, and a baby more or less is not to be considered when it gets in the way of fashion.

DR. NELSON has taken 280 pages to follow a young bee through its life in the egg. What an achievement it would be if it were as carefully followed through all the rest of its life, with all its goings, comings, and doings! Dr. Nelson has laid a grand foundation.

I SAY "amen" to A. I. Root's prayer, p. 911, that the president who comes after Wilson may be a praying man. But I wouldn't mind if the present incumbent would stay on the job for another four years, if he'd only agree to tackle the liquor problem with all his might.

W. P. ROOT, the man upon whom I depend to keep my punctuation straight in GLEANINGS, in his excellent summing-up of Bible mention of honey, p. 974, thinks

Jonathan ate a large quantity of honey. Jonathan testified, "I did certainly taste a little honey with the end of the rod that was in my hand." The mention of Christ's eating honey, Luke 24:42, does not appear in the American revision.

YES, Mr. Editor, I note that the other fellow of the floury name agrees with you that piping and quahking are the same, p. 993. I note also that both you and he avoid explaining how it is that notes of such unequal length *out* of the cell become of the same length *in* the cell. [So far as we are concerned, we did not know that we were "avoiding" any explanation. Perhaps we do not get your point.—Ed.]

DOUBLE CAPPING of sections (that is, a fresh layer of honey built over that already capped) is reported in the *British Bee Journal*, 413. I never had a case of that kind with sections, but have had it a good many times on brood-combs. The curious thing about it is that the bees don't seem to know enough to open the bottom capping; and unless the beekeeper uncaps it the bees may starve before they find the honey under it.

WESLEY FOSTER says of European foul brood, p. 972, "It has been my observation that transferring and requeening produces results while caging the queen has not." In this locality, in mild cases (I'm not sure about severe cases) caging produces just as good results as transferring, and leaves the colony stronger. [Is it not true that European foul brood that has run for a certain length of time loses its original virulence? If that is the case, would it not explain the difference between the experience of Wesley Foster and yourself?—Ed.]

MRS. ALLEN wants to know how many pounds of syrup will replace a given shortage of sealed honey, p. 969. A syrup of 5 pounds sugar and 2 pounds of water is about equivalent to 7 pounds of honey; so for every pound of honey lacking, feed  $\frac{5}{7}$  of a pound of sugar, no matter how much water is added. [Is it not possible that Mrs. Allen has raised the question whether a pound of thick syrup is equal to a pound of honey of the same density? Was it not yourself who made the statement something over a year ago that, pound for pound, honey will go further than syrup? In your statement above you almost imply that, pound for pound, they are one and the same. How about it?—Ed.]

Grace Allen

## THE DIXIE BEE

Nashville, Tenn.



But please, Mr. Editor, after my last paragraph, page 969, Dec. 1, you say that twenty pounds of sealed stores is advisable for northern wintering, and twenty-five or thirty for southern, and that is not what I was trying to elicit, but, rather, this: How many pounds of *syrup* (two measures of sugar to one of water) are required to make a certain number of pounds of *sealed stores*? If you found a hive lacking ten pounds of stores, would ten pounds of syrup do the work? In other words, will a pound of syrup make a pound of honey for wintering? (Why didn't I put it that way in the first place) Our judgment, based on nothing in particular, said no. To hives lacking ten pounds, we fed about fifteen pounds of this two-to-one syrup, on a vague "better-be-safe-than-sorry" proposition; but suppose one wanted to be accurate, how many pounds should he feed? [See answer to a Straw of Dr. Miller's in this issue. If in the fall a colony were lacking sufficient stores to carry them thru we would not hesitate to make up the deficiency by feeding. While a pound of sealed sugar syrup might not equal a pound of honey, it may be a better feed if the honey is of a poor quality. It is probable that a pound of good table honey like clover, basswood, and the like, will go further than a pound of sealed sugar stores, because the former contains some food elements that the latter does not.—Ed.]

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## FOR BEGINNERS.

Have you ever happened to hear of anything called the ventriculus? or anything else called the proventriculus—which you would very naturally, and quite correctly, infer was in front of the ventriculus? Well, there are such things, and most fascinating they are to study about. The more common name of the ventriculus is stomach, and of

the proventriculus is stomach-mouth; and it makes a wonderful story—how the nectar passes through the worker bee's oesophagus, down into her tiny honey-stomach, from there to be either emptied out into cells or held as reserve for her own nutrition. If the latter, how deftly it slips down into the real stomach just any time it is needed, perhaps even when the bee is in full flight. And then the polite, delicate way that the real stomach presses its sensitive little mouth up, right through the honey-stomach, to eject some of this partially digested food, or chyle, to feed the larvæ, leaving the nectar and pollen in the honey-stomach daintily undisturbed. Why! it is as interesting as a new novel, and far more thrilling and

beautiful. And do you know where a bee's heart is? Do study about these things. Every minute detail is startlingly perfect and thoroly worth while to know about. Even if you don't think it practical enough to be necessary, do it for the delight of it and the zest of it and the charm.

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On page 624, Aug. 1, Mr. Gates mentions the occasional change in the flora of a given locality and the appearance of the new honey

sources. Dr. J. S. Ward, Tennessee state inspector, says that somewhere up the Cumberland River the beekeepers report the appearance in the last year or two of a new generous-yielding honey-plant whose name they do not know. It is a late-summer and early-fall bloomer, and Dr. Ward plans to go up there when it opens this year, to help establish its identity.

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Surely Major Shallard's tragic accident arouses the sympathy of beekeepers this whole country over; and how plucky his letters sound—not a whine in them! J. D. Bailey's experience in the disastrous Louisiana storm was bad too. Our best wishes to both these gentlemen, and the hope of a more fortunate year to come.



# BEEKEEPING IN CALIFORNIA

P. C. Chadwick. Redlands, Cal.



Another fine rain, December 4, came in time to save the filaree.

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According to official reports there are now more than 15,000 colonies of bees in Imperial County.

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There has not been a season for some years when the eucalyptus has shown such a profusion of bloom as it does this season, especially the bluegum (*Eucalyptus globulus*).

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The supply of honey is becoming very limited in this part of the world, and prices are advancing a little. One buyer claims to be unable to find enough California honey to fill his orders. A recent sale of a 30-ton lot in Orange County at figures as high as 6 cents is a big improvement in prices offered heretofore. A part of this lot was carried over from 1914 on account of low prices. There is some credit due the beekeeper who owned it and stood for better prices, even if he did have to wait nearly a year and a half to win his point. A number of buyers have been scouring the country for honey, and in some sections, at least, have taken all they could get, at their prices. The market is sure to be cleared before another harvest.

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Displayed on a large bill-board in this city is an advertisement of a corn syrup which is doubtless no better than the same kind of corn product that has been handed over counters for years. Hundreds of eyes have seen the word, the curiosity of many has been excited by this apparently new syrup, and will be satisfied only by the purchase of a trial order at least. One of the greatest ideas in advertising is to keep an article constantly before the public. If the colored cook that is paraded before the public in Cream of Wheat advertisements should disappear, the public would take it for granted that Cream of Wheat had ceased to be, and the sales would no doubt slump distressingly. If honey were paraded to the same extent in advertising, the sales would increase to an enormous extent. But where is the money to back such an extensive advertising campaign?

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The mooted question of "Goldens" seems to have bobbed up again. Both the editor and Mr. Byer discuss it at some length in the Dec. 1st issue. My ideas have not

changed since I had my say in the Oct. 1st issue. I covered the ground pretty fully so far as my ideas were then concerned. Now comes Mr. Byer with the plea that they do not winter at all well, while Editor Root says, "and too many of them have been cross, very cross." Since my plea for the fair race in the Oct. 1st issue, I have received letters from as far north as the location of Mr. Byer, from men who assure me they will compare them with any bees of any kind, for any qualification.

I have bred extensively this season from a golden queen that was guaranteed in every respect and qualification. I have as yet no reason to question the guarantee; and as for crossness I can only say there has been no smoke used on this colony during the entire season, and not one sting has been suffered by any one. Last season I introduced both golden and three-banded, with no apparent difference in their qualities. I have never claimed the goldens were superior to the three-banded strain only in black brood (European foul brood) resistance; but I do claim there is no sound reason why there cannot be a strain the equal of any three-banded strain for other qualities. It is my opinion there are now several strains which have reached that point, and I have the assurance of several that they are superior in resistance to disease. As a matter of producing honey, the thorobred stock of any race have nothing on the common mixed race of mongrel breeds. Last season the best colony in my yard was the darkest in point of color.

If I were in a locality where there was no danger of "black brood" I would breed alone for quality, whether from a dark or a light race; but as it is, I cannot afford to take the risk. I believe the goldens are superior in resistance, and I expect to prove that the goldens are at least the equal of any race on earth. There are some strains of chickens which have been bred for show points so long that, as a commercial factor, they are very unprofitable. That has been the case in the past with the goldens; but the future will correct those mistakes. To a great extent it has been corrected; but the prejudice against them remains to be lived down. They must now pay the price of color. They should at least be given a fair and unprejudiced individual-strain test, for there is more than one strain of three-banders being unloaded on the public that have little merit to back their sales.

# BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado



## THE HONEY MARKET.

If all the comb honey could be sorted in such a manner that the honey subject to early granulation could be marketed each year before Christmas time, and a good supply of the clear transparent non-candying comb honey held for the spring trade, the market would be more stable. The trouble is that there is always the fear of not enough comb honey being produced to go around, so the buyers load up early on high-priced honey, buying for the whole season. If the crop is larger than estimated by the buyers, there are quite a few cars of honey that have to stand the slump in prices late in the season. If these cars of honey could be held until spring, just as good prices could be secured as for the early honey, provided it is not subject to granulation.

The year 1915 has passed, and in beedom a few signs point to progress made. The use of honey is being extended, and the beekeepers are realizing that practical honey publicity lies largely with them.

The "Eat Honey" sticker has won its way into favor with hundreds and thousands of beekeepers.

The perfecting of methods for shipping bees from the South is doubtless one of the most important elements that will have a large influence on future beekeeping.

In the West, the honey industry is growing by leaps despite the ruinous prices of California honey. Beekeepers are getting better organized for business. Idaho has a new association, and efforts are being made to start one in California. Success to them!

The last carload of Colorado comb honey in the producers' hands that I know of has just been sold, and will be shipped to Kansas. Prices secured for this honey are lower than most honey brought, but are a fair average for the last few years. I learn that \$2.65 for fancy, \$2.40 for No. 1, and \$2.20 for No. 2 were secured. This honey was produced in western Colorado, where the freight rate is higher to the East than from Colorado common points.

## VARIATIONS ALLOWED BY NET-WEIGHT LAWS.

In a letter from Mr. Ernest Ryant, of Connecticut, to Mr. E. R. Root, and forwarded to me, I find the following: "I think the grading of honey as related by Wesley Foster on page 884, Nov. 1, will sooner or later get him into trouble. The selling of such sections by the section would lay the seller liable to prosecution in this

state. No variation over  $\frac{1}{2}$  ounce is allowed—that is, if a section is marked 12 ounces it must weigh at least  $11\frac{1}{2}$  ounces and not over  $12\frac{1}{2}$  ounces, and the case must average at least 12 ounces."

Here in the West we are stamping our honey with the minimum net weight, and doubtless we are erring in thinking that, if we stamp a section "net weight not less than ten ounces," it will be all right if it weighs twelve or thirteen. So far none of us have gotten into trouble, but it is better to find out the regulations of the various states before we do. If GLEANINGS could give us the laws of the various states on these points it would help. We ought to be able to put up our comb honey so it would sell in any market.

## EXTRA PROTECTION NOT NEEDED IN COLORADO.

Dr. Phillips states that additional protection, other than that provided by single-walled hives, is beneficial for bees throughout the United States. The majority of beekeepers with whom I have talked regarding this, disagree for their locations. The double-walled hives have been tested over a series of years, and bees kept in them have not wintered as well as in single-walled hives. The winter case has not been well tested here in the West, to my knowledge. Our beekeepers have demonstrated that normal colonies wintered on their summer stands winter almost perfectly.

Granted that bees wintered in a case containing four or eight come thru in better shape (which I have found no one willing to grant unqualifiedly), the majority say it will not pay for labor or expense.

The only time I can see where additional protection could pay is when we have a month of zero or near zero weather. This does not happen oftener than once in three years. We do lose some colonies at these times that would be saved if given more protection. But I do not think it will pay to go to the expense when we consider that, if all our colonies were wintered, the increase from swarming would soon overstock our locations. Some are overstocked now.

One beekeeper, who owns 800 colonies, told me he counted on 25 per cent loss each year, and that gave him enough empty hives for increase, so new hives did not have to be bought. This beekeeper is located where the winters are severe.

We should like to see some plan worked out that will meet our conditions. The arid conditions are not the same as in the East.



# NOTES FROM CANADA

J. L. Byer, Markham, Ont.



Generally speaking, we had a nice open fall, but with few days when bees could fly. About Nov. 15 we had a day or two when bees could have had a flight if they wished, but very few were in the air. While it always gives us a feeling of satisfaction to see the bees have a thoro flight late in November or early in December, yet actual wintering results seem to be but little different whether they have this choice or not, provided the stores are of good quality and the hives are heavy.

This reminds me of seeing in the Dec. 1st issue of GLEANINGS, page 969, the statement that in Ohio the editor considers 20 pounds of sealed stores, including combs, as sufficient for wintering in the North, while 25 or 30 pounds would be necessary for the South. As we are further north than Ohio, on the same basis of reckoning we should require even less honey than they do in Ohio. But I wonder where the producer here in Ontario lives who would trust his colonies outdoors to go into winter quarters with stores aggregating but 20 pounds, combs included. The most of us will double that allowance, and then have nothing left over by the time the flow starts the following June. Mr. Sibbald makes his ten-frame Langstroth hives to weigh 70 pounds without the cover, and many others insist on nearly as much.

I am convinced that, for our climate, an allowance of but 20 pounds, combs and all, would often result in starved colonies early in spring; and in almost every case, even if bees managed to pull through till early spring on these limited stores, their death would not be delayed much later. If bees can be trusted to come out all right in Ohio on the amount stated, then that state certainly has us beaten a long way on the question of stores necessary to carry colonies successfully thru the winter.

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"When hives are completely covered with snow for several months it is enough to kill any bees," page 964, Dec. 1. I used to think so; but in the light of experience for the past few years I am forced to change my mind on this question. At our north yard, often referred to, we have a heavy snowfall as a rule; and the more snow there is over the hives the better we are satisfied, and this yard is never visited by us from late fall till early spring.

The cases containing the bees drift right

over at times and remain covered some seasons for three months or more, and yet we have so far had perfect wintering. Once I was at this yard when all cases were out of sight, and I got a shovel and dug down to the entrances of a few of the cases, and I would find a large air-space around the entrances where the snow had been melted by the heat of the bees. Of course we use a quilt over the frames—wouldn't think of having a board under such conditions. About ten or twelve inches of packing over this quilt, and then between the top of packing we want a few inches of space for air to circulate between the packing and the cover of the case.

With a board over frames allowing little or no upward ventilation—a small entrance and then all hives covered over with snow for a long while—that's an entirely different proposition. We cannot visit this out-yard during the winter, so we have adopted the former plan; and as the storms blow here in York County it is with considerable satisfaction that we anticipate even worse blizzards up north and have no fears of the bees suffering. If in a locality where snow is abundant, try this plan and cease worrying, and at the same time save yourself a lot of work in shoveling snow away from entrances all winter. [See editorial.]

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The writer has just returned from spending a week in New York, after being at Syracuse with the New York State Association convention. While I gleaned much that I hope will be of interest for the future, time forbids making more than a mere mention of my visit just at present. Assuredly the New York state fellows—at least those around Syracuse—"get there" in more than one way. From what I could learn, I doubt if there is any other section in the United States or Canada that is as heavily stocked with big beekeepers and bees as Onondaga Co.

I had the privilege and pleasure of enjoying the hospitality of Mr. House. Mr. Kinyon and myself were unable to leave friend House's on account of a regular blizzard all day in which about a foot of snow fell. While Mr. House had intended to take us on an auto trip to visit various beekeepers—Mr. Doolittle among the number—this pleasure had to be given up; but, after all, what a "talk fest" we had all that day long—Mr. House, Irving Kinyon, and yours truly!

# CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.



## PROLIFICNESS OR LONGEVITY.

"Which do you consider preferable—a queen having extra prolificness, or the queen whose workers have the greatest longevity? Is it possible to combine the two in one mother bee?"

I believe it possible that a queen may be prolific, and her bees long-lived too; but Dame Nature has some peculiar plans of her own, and, when left to herself, she generally takes away something when she adds a great advantage to anything. So we can rarely expect her to put length of days and many children in the same hand, even when she is dealing with her most favored offspring, the bees. But most queens are given to "sporting a little;" and in this, Nature seems more ready to acquiesce with the bees than with many other things unless it is with poultry.

My belief is that we can combine longevity and prolificness with less nicety of work and trouble than was expended on producing bees with a lengthened tongue; but if we can't, longevity is well worth the effort. Under similar conditions in the hive and colony nearly all the bees would bring in about the same amount of nectar. The important factor is, what will they make of it? In answering this question it is well to remember that the colony of bees which gathers the largest surplus during the honey-flow, and consumes the smallest amount of this surplus in maintaining the colony between or after the nectar flows, is the most profitable one, and therefore the one to breed from. But in order to set about breeding up bees to their highest standard of excellence understandingly, we must know what qualities in the bees stand *first* in the make-up of a honey-gatherer.

In order that we may better understand matters, allow me to give something of the past that first called my attention to the value of longevity in bees. During the middle '90's one of our most successful comb-honey producers desired to exchange queens; and as I was always on the lookout for any chance to improve the bees I already had, we did so. I gave this queen my best care and attention; but the best she would do at brood-rearing was to the amount of about six Langstroth frames full. I was disappointed, as many of my queens would give to the amount of eight and nine frames practically full of brood. So I marked the colony as one whose queen

should be replaced with one more prolific. My time for superseding queens is when the flow of white honey is near its close; but when I came to this colony I found that it had stored and completed more sections than had any of the colonies having queens giving eight and nine frames of brood. This led me to keep this queen for another season.

The next season proved a repetition of the year before; and while her bees did not seem to start out to work any earlier in the morning, or work later at night, nor seemed to be doing a "rushing" business at any time, they kept steadily at it, with the work in the sections slowly getting ahead of those which made a far greater showing as to working numbers at the entrance. This queen lived to be nearly five years old, and her colony held the "banner" as to completed sections for four years: and from close observation, longevity of the worker bees was the only reason I could ascribe to account for their superiority. The third and fourth year I used her as a breeder to a great extent.

If six frames of her brood gave a working force equal to eight frames of another queen, then that colony has saved the labor, the honey, and the pollen necessary to rear the two extra frames of brood. The labor part is not often thought about. The less brood that bees are rearing, the more slowly they are aging, other things being equal; and this saving tends to lengthen still further their time of service as the bees which "pile the honey in." And this is not all. Long-lived bees have less brood in proportion to keep warm and care for; and the small amount of brood for the size of the hive tends to discourage swarming as much as anything I know of.

Longer-lived bees do not slack off brood-rearing so quickly as the working force is large in proportion to the brood, and so a smaller nectar-flow suffices to keep the queen laying to her full capacity. This leaves the colony in better condition to begin storing a surplus from any smaller flow that may occur. What does all this amount to? To produce a given maximum force of workers, less honey is needed, less pollen, less labor, less heat; consequently a colony attains its full strength earlier in the season, and more surely, no matter what the weather conditions. It is better supplied with stores than others shorter lived, and the stores stay there at less loss of bees.



# GENERAL CORRESPONDENCE

## EUROPEAN AND AMERICAN FOUL BROOD

### Their Differences, History, and Methods of Treatment

BY OREL L. HERSHISER

There is no subject pertaining to apiculture that absorbs more attention of the apiarist than that of foul brood. In view of the rapid spread of the two types of the disease, especially the European variety, every provident beekeeper is eager to learn all there is to know of them. It has been said that the European type will eventually sweep the whole country; and no one who has had a season or two of experience with it will doubt the statement. To this may be added that the spread will continue with ever increasing ratio. The time is now at hand in many of the states and Canadian provinces when few beekeepers can feel secure from its appearance at almost any time in the breeding season. It is appropriate, therefore, that we diligently seek and digest all the information possible on this subject, to the end that we may counteract its baneful influence on our apicultural endeavors and emerge from its attacks victorious, with better bees and apiaries, with greater proficiency, and with increased production and profits. That all this may be accomplished has been proven by some of the apicultural *savants* who have blazed the way for us.

Of the two foul-brood diseases the European variety is perhaps the more to be dreaded because of its inexplicably rapid spread in the colony, through the apiary, to neighboring apiaries, and to new centers of infection; but American foul brood is said to be the more difficult to treat.

There are various means by which these diseases are disseminated. The observation by many bee-inspectors, that they are more prevalent in and about cities emphasizes the claim that they are conveyed in the honey shipped to the markets, the bees carrying to their hives the disease in the honey they gather from containers when the same are relegated to the scrap-heap or garbage-can. Honey-containers thrown from car-windows have undoubtedly carried the diseases into new centers. It has been carried by shipments of bees in full colonies and nuclei. It has been said that the disease has been conveyed by means of diseased honey used in the manufacture of food for queen-mailing cages.

Undoubtedly swarms often carry the dis-

ease; and as they have been known to travel several miles before arriving at the selected place of abode, the disease may be carried into a new center in this way. If a swarm issues from a diseased colony and occupies a hive where a colony had perished, the disease contained in the honey the swarm takes with it is immediately stored in the old comb, and serves as a starting-point for the disease. When a diseased colony becomes reduced in bees to the extent that it will succumb to robbers, all colonies that participate in the robbing will become infected, thus spreading the disease far and wide.

The above several means by which these diseases may be disseminated applies equally to both varieties; but the very rapid and almost simultaneous appearance of the European variety thru the colony, in so many colonies in the apiary, and likewise in many neighboring apiaries, in contradistinction to American foul brood, is a peculiarity of the European variety which investigators have thus far been unable to explain satisfactorily. It is thought by some careful observers, notably Mr. R. F. Holtermann, that the disease is carried on the feet and body of the bee to the flowers, and that when bees from other hives visit such flowers they in turn will carry the infection to their hives, thus spreading the disease to other apiaries perhaps miles away. This seems probable; but the theory would be more readily accepted were it not the fact that bees are more successfully treated, and that the disease, in resistant colonies, rapidly abates during a good honey-flow, just when, according to the theory, it would be spreading most rapidly. Still this would not be positive proof that the disease is not spread in this way. It is conceivable that, during a honey-flow, the small amount of contamination that would be so introduced into healthy colonies would be insufficient to make the disease noticeable immediately. It might make slow progress for a season or two; but in a colony that is susceptible, it would gain headway in an ever increasing ratio, and finally, when dead, if overlooked by the apiarist or beyond his control, there would occur one of those mysterious outbreaks that reach so many colonies

in the apiary and all the apiaries in the neighborhood at the same time.

Dr. C. C. Miller has a theory which accounts for the manner in which the disease is ordinarily continued in a diseased colony. It is that, "when a larva becomes diseased and dies, before it becomes putrid, the nurse bees suck its juices and feed them to the healthy larvæ, which in turn become diseased." The fact that the disease commences to abate when a honey-flow is on, at which time the larvæ are fed on uncontaminated nectar and pollen, instead of food that is used at times when no honey or pollen is being gathered, seems to support this theory.

Another theory may here be advanced, which is that the peculiar sour-smelling condition of European foul brood, before the dead larvæ become putrid, is attractive to the bees, and that they not only suck the juice from the dead and feed it to the healthy larvæ in their own hive, but that silent robbing may be a condition brought about, especially when the colony becomes depleted by the ravages of the disease by the liking of the bees for the peculiar flavor. In this way it may not only be carried from hive to hive in the same apiary, but from apiary to apiary over a radius extending several miles.

Those who have tried to get colonies of uniform bees of some particular race for exhibition purposes—Italian for example—where most of the bees in the neighborhood are of a different color, know how common it is for bees of one hive to gain entrance to and be accepted in another, even when the different races are in apiaries some distance apart. It is probable that bees become mixed to some extent in neighboring hives and apiaries to a far greater extent than is commonly supposed, and this when not robbing. How much more, then, would there be mixing of bees thru the several apiaries in any given neighborhood when the peculiar odor of European foul brood is present, if it is attractive to them. This silent-robbing theory is strengthened by the fact that often the stronger colonies will be

badly diseased while the weaker ones, having comparatively few field workers, and hence not in condition to engage in robbing, will not take the disease or will be the last to take it. If silent robbing is the cause of the rapid spread of the disease it offers an explanation as to why adjacent colonies, or those near each other, are most likely to be the ones infected rather than a uniform distribution of diseased colonies throughout the apiary.

Messrs. M. G. and C. P. Dadant have advanced the theory that the bacilli of European foul brood are inherent in the queen taken from an infected colony, and transmissible by her. If this is true we are wasting valuable time by employing the shaking and brushing methods, *a la* McEvoy, unless we requeen at the same time, regardless as to whether the stock is of the resistant type. How are we to reconcile this theory with the many cures that are claimed where the shaking or brushing treatment is practiced? and with Dr. Miller's treatment by caging the queen in her infected colony for a period of eight or ten days, and then releasing her? and with Dr. Miller's other treatment by brushing the bees and queen of an infected colony on to brood-combs that this colony had cleansed above an excluder during a period of 21 days? Dr. Miller reports success in most cases with both these treatments. May it be that, with resistant colonies, the bees prevent the disease from becoming noticeable? That larvæ that have inherited it from the queen are so promptly cleared out that it never becomes apparent, and that only in susceptible strains of bees would it gain headway? This point should be cleared up by further experiments, not only by individual beekeepers but by governmental investigators.

Kenmore, N. Y.

[This is the first of a series of four articles by Mr. Hershiser on the history and treatment of foul brood. In the next issue he will discuss Dr. Dzierzon's method of treatment.—Ed.]

## WINTER SCHOOL IN BEEKEEPING, MASSACHUSETTS AGRICULTURAL COLLEGE

BY DR. BURTON N. GATES,

*Associate Professor of Beekeeping, Amherst, Mass.*

The Massachusetts Agricultural College announces its annual Winter School for Beekeepers, which lasts ten weeks, commencing January 3, 1916, and closing March 10. This is one of twenty-eight

short courses carried on simultaneously, utilizing the strong agricultural faculty. It is possible for the students to arrange their work so as to secure several of the 28 courses offered.





Two lectures are given weekly.

The beekeeping course deals with fundamental and practical apiculture; its relation to horticulture—that is, the growing of field and market-garden crops; greenhouse vegetable production; cranberry culture, and fruit-raising. The following subjects, among others, will be included: The natural history and behavior of bees; races of bees; handling and manipulation of the stock; a discussion of queens and their importance; the subject of wintering, spring manipulation, and kindred topics; comb and extracted honey production; the care of apicultural products; diseases of bees and their treatment, together with a discussion of the tools and implements used in beekeeping. First-hand experience in all phases of the subject is emphasized, conditioned only by the season.

This course is usually largely attended. This college is particularly well equipped, both for the intensive and smaller beekeeper. The course comprises two lectures and one laboratory period weekly, with certain periods devoted to special lectures or excursions. Those interested in enrolling should address the Extension Service, Massachusetts Agricultural College, Amherst, at an early date, requesting an application

blank. Full printed information is available. The course is in charge of the writer, assisted by Mr. John L. Byard.

#### BEEKEEPERS' CONVENTION.

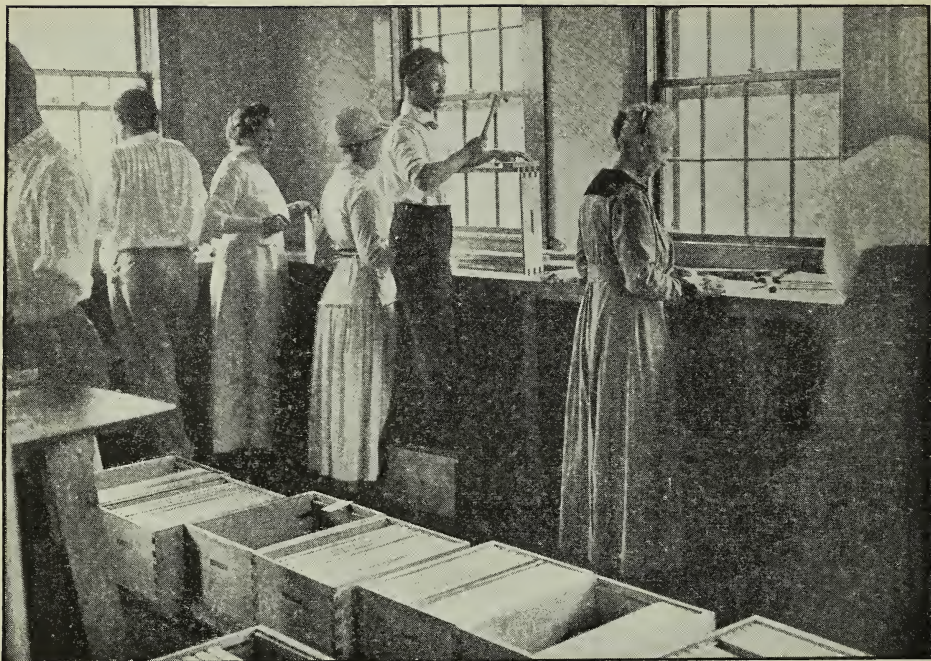
A convention is usually held annually. The 1916 convention is not yet fully planned. A special announcement will appear in this paper later. The date, however, is determined for March 14-16 inclusive. This forms the conclusion of the Winter School in Beekeeping. A number of prominent authorities will appear upon the program. Remember to set aside these dates and plan to attend.

#### TWO OTHER COURSES.

The Spring Beekeeping School, May 31 to June 14, 1916, inclusive, is an intensive school for practical beekeepers. An especially attractive course is offered this year. This school is held at Amherst once in three years. A special announcement will appear in this paper soon.

During the annual Summer School a course in beekeeping will be given beginning about the middle of July. This course is designed primarily for teachers and those not able to attend the more intensive course. Announcements will be issued in the spring.

Amherst, Mass.



Students are required to do laboratory work.

## COLONIES IN EIGHT-FRAME HIVES

How to Operate Them so as to Get a Maximum of Results in Brood and Honey the old Double-decker Scheme of Years ago

BY C. P. HENRY

While most beemen advocate for this locality (southeastern Oklahoma) the eight-frame hive, it seems to me from practical experience that it is too small. It does not give sufficient room (after storing winter supplies) for an active queen to keep up a colony sufficiently strong through late fall and early spring. The result is a weak colony in the spring when the flow comes on.

Our main flow comes in June and July, and usually lasts from three to six weeks. It seems to me that a larger brood-nest would give the queen a chance to have a rousing colony to gather the nectar when it is to be gathered, instead of having first to rear the brood. The consequence is, when our colonies get strong the flow is about over.

As I have all eight-frames I am thinking of putting another regular body over them and taking three or four frames of brood from the bottom and place in the top chamber to force the bees to occupy this early

also. I believe any good queen is capable of filling ten or twelve frames with brood in an average season. Moreover, we have considerable warm weather through the winter months; and if the colony has plenty of stores I believe they will raise brood through a considerable part of the winter months. My bees are flying today, Nov. 25, nicely.

I should like to have your opinion along these lines as to whether you sanction my idea of dividing the combs as stated.

Hugo, Okla.

[The plan you refer to will work very nicely in your climate; and a modification of it can be used much further north. Some eighteen years ago we worked one yard of eight-frame hives on the double-story principle. As soon as the queen and bees comfortably filled the lower story, we put on an upper story, and in it we placed two or three frames of brood and bees from the lower hive, and filled the space below with



empty combs. Above we put an empty one in each side of the brood, and last of all a division-board. As soon as young bees began to hatch out and the bees needed more room empty combs or frames of foundation were added till the space in the super was filled. Sometimes the brood was spread by inserting an empty comb between two frames of brood.

Colonies so treated built up to good strength, and did much better work in storing either comb or extracted honey than colonies that had been confined to the eight-frame brood-nest through the breeding season. To keep a queen down in a hive that is too small for her is certainly a loss of bees. It is the strong colonies that get the honey, especially when the flow is light.

When we worked on the double-story plan, and ran for comb honey, we removed the upper story and crowded the sealed brood into the lower, and put on one or more section-supers, according to the strength of the colony. This is the plan that has been worked so successfully by Dr. Miller. The unsealed brood was given nuclei, and colonies that were not strong enough to fill even one eight-frame body.

In running for extracted honey we added upper stories, as we called them, until we had them four and even five high. A full

account of our experiments in that one yard will be found in this journal for August 1 and 15, 1897, and Feb. 15, May 1, June 1, July 1, and Aug. 1, 1898.

There is nothing to prevent working ten-frame hives on the same principle. If a good queen needs more than ten frames put on an upper story. The fact is, some of our most successful extracted-honey producers are operating their colonies in two-story hives. One man in particular, who secures a crop of honey every year whether his neighbors do or not, always runs his colonies in two stories. If a queen cannot furnish at least twelve frames of brood in the breeding season he substitutes one that will; and he gets a crop of honey providing there is any nectar in the blossoms.

You can carry out the same general plan in your climate and get the bees strong early in the season, because you do not have severely cold weather. We consider Oklahoma one of the best places in the United States to carry out this scheme. If your bees are all in eight-frame hives we would say it is the only way to secure strong colonies; and it is the only way to get a crop of honey. If you were running for comb honey we would simply remove the upper story at the proper time as already explained.—ED.]

## AN AGITATOR IN THE HIVE

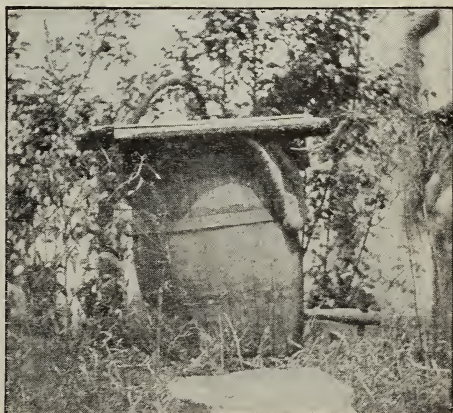
BY ÆSOP

A beekeeper who claims to have found a way to get the honey and not the stings sent for me to look at his device. He told me how he intended to work it for all the honey he wanted, and leave some to sell; and as I found he had gotten hold of a new idea in beekeeping I took a photograph of his contrivance. I will say, however, that I do not advise its use except for those who are afraid of getting stung.

The device, as will be seen by the photograph, consists of a barrel set upon a stand high enough to allow a pail to be put under it to catch the honey as it runs out of the barrel. Thru the cover of the barrel runs a bent iron rod. To the bottom and along the sides of it, at intervals, are cross-pieces of iron with sharp edges to allow them to cut thru the comb inside the barrel and release the honey which flows to the bottom of the barrel thru a wire screen or strainer, and which is drawn off thru the faucet.

The iron rod, or pipe, as will be seen, is bent so as to allow it to be turned like a crank, as it takes considerable force to turn

the knives in the comb after the bees have built around it and sealed it in with propolis. The inside fixtures may be easily understood from the following diagram, from which the device can be made if it is wanted.



Combined hive and extractor—  
the middleman cut out.

The bees fasten their combs to the inside of the barrel, and the revolving knives reach far enough to leave a space of six inches between them and the sides of the barrel so as not to cut the comb loose and allow it to fall and drown the bees, but to shave off the cappings and allow the honey to run down thru the strainer, where it is drawn off as needed.

The entrance for the bees being on the opposite side of the barrel from the faucet allows the operator to draw off the honey without disturbing them or he can close the entrance while he is taking the honey.

It may be closed at night after the bees are all in, when there is little danger of being stung except by working the device at the wrong time or in the wrong way.

Since there is no patent on the invention as yet, anybody is at liberty to make one for himself, and use it without being disturbed except by the bees and he will find all danger of being stung is eliminated; and while he does not get comb honey it is a fine way to secure strained honey that he is satisfied is not adulterated—simply turn the crank a few times and open the faucet until the bucket is full; and if you get stung it is your own fault.

ÆSOP.

[Talk about "Bee Hash" honey! Considering the mangled bees and brood, such honey ought to have a "rich" flavor; in fact, it ought to be the equal of any *strained* honey.—Ed.]

## A WELL-ORDERED BEEYARD

BY W. E. SEAMAN

This apiary is located about fifteen feet from the National Pike leading to St. Clairsville, Ohio, and is one of which any person should be proud, especially if other beeyards in this locality are to be taken into consideration. The yard is well kept. On one side is a row of linden trees; on the

other is a wide border of flowers of all descriptions, and at one end a fence covered with rambler roses. Mrs. Seabright gets the credit for the flowers, as she is an expert in this line. All through the yard, posts have been set on which well-pruned grapevines are clinging, laden with fruit.



A yard of which any one should be proud.



Mr. Seabright aims to keep about forty colonies of bees, and these are arranged in four rows all facing the same direction.

Previous to taking up beekeeping Mr. Seabright was an expert blacksmith. He is still using a wagon built some forty years ago which is trimmed with hand-forged ironwork. It looks better than the wagons of today. He followed his trade until his health failed, and he was advised to take up some outside work. Thru the influence of his wife, who had some knowledge of beekeeping, he started on a small scale. Gradually he got the "bee fever" and went about the country buying up all the bees available to get the combs if for nothing else. He has now been in the business thirty-eight years, and says in all his experience he has no fixed rule for handling bees. He is a student of Moses Quinby.

Mr. Seabright has had a great many different styles of hives, but now uses an eleven L-frame chaff hive with a tall outside top rim. He built these hives in 1883 so he could handle two-pound sections. Recently he went thru some old discarded appliances and found some two-pound sections of honey twenty years old. He has tools of every description for use in the apiary. One thing worth mentioning is a steel bracket which he hangs on the inside on the rim of the hive in which he can place two or three frames.

It can be said that all Mr. Seabright makes is "on the square." He has a power saw and a chest full of forms for putting frames and sections together. He says, "If you have a hobby, have it right," which is good advice if the hobby is a paying one, as his has proven to be.

Wheeling, W. Va.

## THE HABITS OF THE SKUNK

BY FRANK C. PELLETT

For several years I have been carrying on observations of the food habits of various wild creatures of mere or less unsavory reputations. In some cases most uncomplimentary criticisms have fallen upon my head after the publication of the results of these investigations. The skunk has been of special interest, and the study of this animal has extended over several years, with perhaps three dozen individuals under observation. This animal is so generally condemned that it requires some courage to say a word in its defense.

Nearly every one has known of cases where chickens were destroyed by these animals, and, as a result, the common impression has grown up that skunks as a class are poultry-killing animals. On one occasion I confined a hen in a pen with two large skunks, and, altho they sniffed the bird, and it was apparently a source of great curiosity, they did not offer to injure it. I have at times released captive skunks on my grounds where poultry was easily available, and have done everything to learn the real food habits of these little animals. Some individuals have remained about the place for weeks at a time without disturbing the poultry in the least.

On one occasion some boys found a very young skunk, and, thinking to have some fun, wrapped it up carefully and gave it to a young lady, a daughter of a friend of mine. When she opened her package she was at a loss to know what disposition to make of the animal, but finally gave it to

the cat, thinking that she would kill it. The cat, however, took the little creature to her nest and reared it with her kittens. This animal remained with that family for more than a year, and never once showed the slightest inclination to disturb the poultry. As nearly as I can tell from my observation of the animals, both in confinement and unrestrained, not to exceed one in ten of



It requires considerable courage to say a word in his behalf.

them will form the poultry-killing habit. I feel very sure of my ground when I say that as large a percentage of the house cats are destructive to poultry as are the skunks. It would require altogether too much space to describe in detail the various experiences that we have had with the numerous skunks

here at our home. However, while occasionally one will form the poultry-killing habit, by far the greater number confine their food to small animals and insects.

While I have not made any special study as to the extent that bees enter into their diet, I should expect every skunk to eat bees freely if they chance to find them, for insects seem to be the natural and preferred food of the animals. So far as I can tell, they show little preference as to the kind of insects, but seek those which are most abundant and consequently easiest to obtain. Probably only occasionally does one learn how to get the bees from the hive by disturbing them. As the skunk feeds mostly at night when the bees are quiet, they would not be likely to find them in cool weather unless they had first chanced upon a hive when the bees were hanging out during warm nights. I can readily see that skunks are a serious pest in the beeyard in many localities. On the other hand, aside from the beekeeper, there is seldom serious cause of complaint. So few individuals become destructive in proportion to the whole number, that the good they do far overbalances their injury in the poultry-yard. I am familiar with the fact that, where one animal takes to killing chickens, it often happens that several others of the same family learn the same trick.

It is not a difficult matter for the poultryman to protect his chickens from possible attack; and the destruction of the large numbers of grasshoppers, crickets, mice, gophers, and other pests which make up the bulk of the food of the skunk would seem to make it worth his while to do so,

rather than to fight the pests after killing the skunk.

With the beekeeper it is a different matter, for it is not easy to protect his bees from attacks by the animals. Insects being the preferred food, he can expect a visit from every skunk that chances to pass the apiary. These animals are very skillful in catching insects, and one who has not observed them closely will be surprised at the facility with which they make a capture. Where one's apiary is in a compact form and on comparatively level ground it should not be difficult to fence out the animals with a small-mesh woven fence, altho it would be some expense.

Just at present some of these animals are living in our barn close to the hen-roost. Altho we see them frequently they are not very timid, and show no disposition to attack the poultry, which are housed in small buildings with roosts less than two feet from the ground.

Atlantic, Iowa.

[During this last year, for some reason skunks in this particular locality seemed to have been much more numerous than usual, and the reports of their depredations in different parts of the country lead us to believe that the condition is not local. Perhaps, as our correspondent intimates, the beekeepers suffer the most; but we have always supposed that poultrymen consider skunks as natural enemies on account of the loss of young chickens. Several years ago we shot a skunk after it had killed nine or ten little chickens by biting holes in the back of their heads.—Ed.]

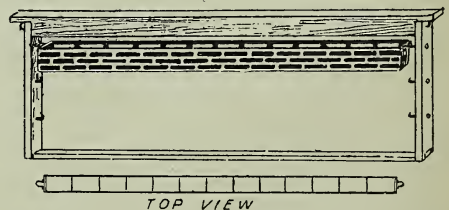
## A HANDY QUEEN-CELL CAGE

BY JOHN H. ROSSER

For the past six months I have been working for A. H. Stephens, a 600-colony beekeeper living sixty miles or so from Brisbane and near the New South Wales border. When queen-rearing we tried a cell-cage after Dr. Miller's pattern with queen-excluder sides. (When we used wire-cloth sides our virgins were dark.) The queens from the new cage were good, but it was not as convenient to work with as we should have liked.

Mr. Stephens thought of trying a cage that would hang in a Langstroth frame, and whose divisions would be just deep enough for the queen to hatch in, and just wide enough for the cell to turn around. We used a tin slide for a cover, and found that

it killed a few queens. So we put a strip of calico under the slide—result, a perfect cage.



These are the dimensions: Length  $16\frac{3}{8}$  inches, depth  $1\frac{5}{8}$  inches, width  $1\frac{1}{16}$  inches, with 26 divisions, each  $\frac{1}{2}$  by  $\frac{5}{8}$  inch in width. To make it, take a piece of queen-





W. H. Blackford, of Capay, Cal., started this yard in June, 1914, with one hundred three-frame nuclei. This June he increased to 238, buying 203 more.

excluding zinc of the right size, solder tin divisions on one side in the top; fold the excluder under these, making the bottom, and then fold up the rest of the zinc, making the other side. Solder this side to the divisions in a few places. Turn the top edges over to make a groove for the tin slide. Solder to each end of the cage a loop to hook over a hook made of a wire nail driven through the end-bar of the frame.

Crowd the bees of a six-frame nucleus on to two frames and this frame with cages. Put cells in against one wall, so as to leave as much room as possible to prevent queens being caught between the cell and wall, as a few are liable to be. Note the age of the cells in the queen-book. When the queens hatch, take the cage around to the nucleus hives and run the queens in with a very little smoke. If an odd queen gets out of a cage, remedy this by not using the division she gets out of. When the first cells are put in they may drop to the floor unless the sides of the cage are waxed.

We had varying results with the smoke method of queen introduction, but at our last experiments we had as many losses with cages as with the smoke. We still use the smoke method and follow the directions carefully, especially in regard to contracting the entrances for a few days.

We have found the method of queen-

rearing given by A. C. Miller a great success; but we have to start our cells in a queenless hive. I use his record-book; and for ease and simplicity in operation it is the best thing on the market. In queen-rearing we have a record of, first, the starter hive, showing just when we gave the cells and how many. An example of the other records follows:

| QUEEN-REARER                         |                 | CELL-MINDER |                 |
|--------------------------------------|-----------------|-------------|-----------------|
| March 24,                            | 1 bar, 15 cells | March 28,   | 1 bar, 15 cells |
| April 1,                             | 1 bar, 16 cells | April 5,    | 1 bar, 16 cells |
| HATCHING HIVE                        |                 |             |                 |
| April 1, top cage, 15 cells.         |                 |             |                 |
| April 8, middle cage, 16 cells, etc. |                 |             |                 |

The cell-minder is used between queen-rearers, and the cell-cages when we are going full time with cages. We have but three of these. Our nuclei are four in a hive, on L. frames. Hives are numbered on one side, and nuclei numbers, 1, 2, 3, 4, etc., start from that side.

Here is an example of our nucleus record:

| No. 1.  |          |         |         | brood<br>4 uns<br>3 s | honey |
|---------|----------|---------|---------|-----------------------|-------|
| 1<br>13 | 2<br>F13 | 3<br>13 | 4<br>13 |                       |       |

By 4 uns we mean "gave No. 4 in No. 1 nucleus 1 frame of unsealed brood;" 3s means "gave No. 3 in No. 1 nucleus 1 frame of sealed brood." F13 means queen failed to mate; 13, queen taken; and 13, given virgin on 13th.

Tambourine, Queensland, Australia.

## LAYING WORKERS NOT CLEARED OUT BY SHAKING

Letting the Bees Fly in a Wire-cloth Cage in a Warm Room to Cleanse Them of Liquid Feces

BY MOODY BRENNEMAN

Late last summer I found one of my young swarms of bees queenless, and it already contained laying workers. I carried them (hive and all, after first placing another hive containing one frame of foundation on the stand), a distance from the apiary, and shook the bees all off the frames on the ground. This was done in the evening just before dark. After they had got back in the hive on the old stand I gave them a little syrup, closed the entrance, and left them there a day or two, after which I gave them several fresh empty combs with one comb containing eggs

each side of the comb; and upon close examination I found them covering quite a patch of sealed worker brood.

How do you account for those drone-capped cells at that time, as mentioned above? Now for the thing I wish to get at.

Knowing that such a small colony would never winter over I thought I would try an experiment. I made a two-frame observation hive, to one end of which I attached a small screen cage about 10 x 14 x 22 inches with a board floor and ends, the entrance of the hive opening into the cage. When the frame containing bees was put into this

hive, the bees having been robbed out, they were in a starving condition, some already showing signs of dysentery. I at once brought them with the cage in front of a window where they have been ever since—about two weeks and a half. They have had water, and a small feed of honey each day. Forty-eight hours after being brought in, the queen was laying. They now have some sealed brood; but the old bees (some at least) are not doing well. Each day there are more dead bees in the cage. They look very much like bees having paralysis, but have shown no nervousness as yet. Their



Another view of Lakeside Apiary, Apopka, Fla. See editorial  
"In the Shade of the Spanish Moss."

and larvæ, and opened the entrance. They built queen-cells. Shortly afterward, upon examining the brood-nest I found the queen-cells gone, and with every appearance of laying workers again—cells capped and being capped, with greatly raised cappings. I did not look long but thought of course the case was hopeless. Not having time to bother with them just then I took out all combs but the one containing brood, and closed the hive (not the entrance), and thus they were left till about the latter part of September, when, upon opening the hive, I found quite a bunch of bees hanging on

comb still contains pollen.

Now, what I wish to know is, would it be possible to have bees inside as above, and be kept in good health, or cannot the inside conditions be made right for them? There are always some of the bees that seem restless, and appear continually to want to get out of the cage, while others go calmly about their business.

Berne, Ind.

[The plan of shaking all the bees of a fertile-worker hive some distance from the old stand has been mentioned before. Sometimes it works, and sometimes it does not.



In your case it is evident that the laying workers came back to the old stand with the rest of the bees after you gave the old stand a frame of eggs and brood. They built cells from the good brood, and later on (you do not say how long after) you found the cells gone. The probabilities are that one of the cells matured and hatched a queen. She probably cleaned out the laying workers and assumed the maternal duties of the hive. One of the best ways to cure a laying-worker colony is to give it a ripe queen-cell, and that is practically what you did.

Attempts have been made before to let bees that are filled with liquid feces fly into

a large wire-cloth cage in a warm room during winter. They will discharge their feces, and some of them will go back into the hive. The high temperature and the general disturbance cause the queen to begin laying; but as a general thing most of the bees thus confined in the wire-cloth cage will worry themselves to death. They will die off one by one until all disappear. The only real remedy is warm weather when the bees can have access to all outdoors. New nectar and new pollen, if there are enough bees to take care of the eggs, will build up the colony; but the process is often slow, usually taking the whole season to build up, and too late to catch the honey-flow.—Ed.]

## IOWA BEEKEEPERS INCORPORATE

BY F. C. SCRANTON

The Iowa Beekeepers' Association filed articles of incorporation, and adopted a constitution and by-laws at its fourth annual convention held in Des Moines in the Chamber of Commerce convention room Dec. 13, 14, and 15.

The following officers were elected for 1916: president, C. E. Bartholomew, Dept. Zoology, Iowa State College; vice-president, B. T. Bleasdale, Des Moines; secretary-treasurer, Hamlin B. Miller, Marshalltown, Ia.; directors, J. W. Schlenker, Ankeny, Ia., J. I. Danielson, Fairfield, Ia., and W. S. Pangburn, Center Junction, Ia.

Dr. Phillips, of Washington, D. C., gave an excellent talk on "Outdoor Wintering," and on the evening of the 13th, in the absence of Mr. E. R. Root, who was to have given an illustrated lecture on "Beekeeping," but who, on account of sickness, was unable to attend, Dr. Phillips gave an illustrated lecture on "Beekeeping." In the absence of C. P. Dadant because of sickness in his family, Frank C. Pellett, state bee inspector, read Mr. Dadant's paper. L. A. Kenoyer, of the Iowa State College,

delivered an illustrated lecture on "Pollinization of Economic Plants." Prof. C. E. Bartholomew, of the Department of Zoology, Iowa State College, described a short and efficient method of producing the finest kind of honey vinegar.

The retiring secretary, S. W. Snyder, of the Snyder Bros.' Fruit and Nursery Co. of Center Point, Ia., was presented a fine rocking-chair as a token of esteem and appreciation for long and faithful service.

Upon departing for their homes many remarked that the meetings had been of great value to them, being packed with common-sense talks and discussions. A large number availed themselves of the use of the question-box arranged by Prof. Bartholomew. The questions were mailed to him in advance and then he chose competent men to answer them and printed the questions and the names of those answering them on the program.

The time and place of the next meeting was left for the board of directors to decide.

Des Moines, Iowa.

## WISCONSIN BEEKEEPERS' CONVENTION

BY HARRY LATHROP

The annual convention of the Wisconsin Beekeepers' Association has come and gone. It was held, as advertised, at the Capitol in Madison, Dec. 9 and 10. Of the instructors and prominent beemen from other states who were advertised, only Dr. Phillips, of Washington, D. C., was present. The absence of E. R. Root was very noticeable, his

appearance being anxiously awaited during the first part of the meeting. The general attendance was better than it had been in many years. The convention was held in the Senate chamber, and extra chairs had to be brought in. With an increased attendance another year, a larger room will have to be provided.



Sixty were present at the

The sessions were crowded with important papers and questions, and the interest was always intense; but the thing of greatest value, as we see it, was the paper by Dr. Phillips, on outdoor wintering of bees. Does it not seem remarkable that a young man like Dr. Phillips should go before old and experienced beekeepers and have them willingly and thankfully preserve the attitude of an A B C class? There is a reason: Dr. Phillips, with the aid of his associates and the means provided by the government, has been able to solve questions that could not be solved by individuals, no matter how willing or painstaking they were.

It now seems to the writer that beekeeping is almost to be revolutionized. We have been ready to make the claim that dysentery is a worse scourge than American foul brood. Think of the enormous drain on the industry through winter losses! We

have also been accustomed to figure winter losses as based on the number of colonies that die outright during winter; whereas we should have figured on depletion of colonies. Strong colonies in the fall that come out of winter quarters mere nuclei cannot be said to have wintered successfully. Dr. Phillips shows that, with proper wintering, there would be practically no dysentery in the colonies. Protection we must have, and it must be better than we have been providing, even if we are to keep not more than half the number of colonies. Dairy cows protected in winter as poorly as we have been protecting our bees would pay no income. What we lacked was conclusive evidence regarding proper wintering conditions. This Dr. Phillips has furnished; and if we don't follow instructions we may just as well turn our live stock out in a cold northern winter without protection.

Some years ago the writer wintered a



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number of colonies in hives having an outer shell which provided four inches of dry packing on all sides, and as much on top as one wished. We usually placed about eight inches of dry leaves over the top super. Some of these hives produced good crops of honey for ten years at a stretch without swarming or dying out during that time. We wish to have bees again in such hives, but would place two colonies in one house and provide a space of six inches instead of four for dry packing. Would that be about right in my location?

One thing that has caused beekeepers to take too many risks in wintering has been the accidental or occasional wintering of colonies under very adverse conditions. We placed too much stress on these isolated cases and drew too much from them.

As an example of how tenacious of life a small colony of bees can be, in the spring of 1885 we bought some bees in hives that

had a deeper and shorter frame than the Langstroth. It was about like the Gallup frame. In transferring these combs the bottom part was cut off to the depth of a Langstroth frame to which we wished to transfer, and the strips of comb that were left on the frames contained a few cells of brood and a few eggs. The old hives were set back against the fence and let alone. A few bees gathered on the stubs of comb, and in due time each built queen-cells and hatched queens which were fertilized. The little colonies built some comb during the summer. The middle combs reached nearly to the bottom-boards, while the side combs were not larger than one's hand. The hives were allowed to remain where they were. No protection was given. They did not have even a quilt over the frames. The cover fitted only loosely, and I had no idea they would live after freezing weather came on. However, they both lived thru; and





the spring and summer of 1886 being one of the most favorable for beekeeping ever known in Wisconsin, they both built up and filled their hives with comb, brood, and honey. One cast a swarm which we failed to secure, not thinking that they were so far along. It is interesting to notice anything like this, but it sometimes leads to wrong conclusions.

At Madison Dr. Phillips spoke on the subject of outdoor wintering; but after hearing him one can readily see that the principles of outdoor and indoor wintering are the same. It is a question of proper insulation and the securing of certain conditions for the colony. The question of winter stores becomes far more simple when we understand that, with proper wintering conditions, bees consume very few stores in confinement and start no brood until the proper time.

So much for the Wisconsin convention. Now I would beg the privilege of a few

words for old friendship's sake. Some have asked why I do not write for the journals as I did once. The reason is that the pressure of other work so encroached on my beekeeping that I realized I was not up with the progress of the times. Nevertheless I did not lose interest, but constantly read what others write, and attend as many conventions as possible. Being still in the railroad employ I have an opportunity to attend meetings of railroad men which we hold at times for mutual benefit and instruction. In those gatherings I certainly meet a fine body of men, but my heart is with the beekeepers. I wonder that so few discover what they are losing by not attending the meeting.

I am unable to attend as many as I should like. I wanted to be at the Akron meeting, oh so much! but it was not possible. Then those informal meetings down at Bradentown—how I should like to be in on that deal!

Bridgeport, Wis.

## HONEY - LABELS

BY JOSEPH TINSLEY

Beekeepers rarely take sufficient advantage of the art of displaying their produce to effect the best sales, as do the various trade firms of their specialties, such as fruits, syrups, etc. It is candidly admitted that a neat label on any article increases its charm, and gives it, particularly if a food, an appetizing appearance. The public gets absolutely tired of a label if it is of an uninteresting character, such as, for instance,

*Pure Honey*, or *Honey from our own Bees*, etc. A white label soon shows the dirt and dust in a shopkeeper's window. This state, I always think, reduces the value of the article in the public eye. Nothing tends to diminish the value of an article more than the presence of dust or dirt.

Get a good photograph of your apiary which will give the public an immediate interest. Send it to an engraving house to

get a good half-tone engraving made, and at the same time the usual lettering put on such as "Pure Texas Honey from the Apiary of John Smith;" "Pure Raspberry Honey," or as the case may be.

I was spending a day with one of the most prominent bee-men of Scotland, Major Maxwell, and could not resist taking a photo or two of his apiary. Later on, when Major M. was asking my opinion on honey-labels, I suggested that this beautiful view



A neat label always increases the charm of an article.

would make an ideal one. I took it to a lithographic artist, who lettered it, and got a half-tone made, which I reproduce. The same label can do also for cans. Another

point worthy of attention is that a similar block can be utilized by the beekeeper when his circulars are printed—note paper, bill-heads, envelopes, etc.

Stone, Staffs, England.

## JOTTINGS ON BEE-YARD EFFICIENCY

BY E. E. STERNER

I have shade-boards on all my hives to protect the colonies from the hot sun. I believe that every hive ought to have a shade-board in winter as well as in summer. In summer it keeps off the hot sun; in winter it keeps off the snow and prevents the cover from rotting.

In the illustration the pole I hold in my hand has an old lard-can attached. It is one of the best swarm-catchers in the world for a home apiary. I would not give ten cents for a manufactured swarm-catcher. They are too small in the first place, and they ought to be attached rigidly to the pole so they will not swing.

Hives should not rest upon the ground, but should stand about eight or nine inches above it, as these in the illustration do. What will you do with the bees that fall to the ground? A strong bee will fly up again,

and a weak or worn-out bee is no good anyway.

Grass ought to be kept cleaned away from around the hives. Why? Bee-moths



Hives should stand nearly a foot above ground.

as well as toads have their hiding-places. You never see a butterfly or toad around my apiary. I keep my hives above ground and cut down all long grass.

Wrightsville, Pa.

## HIVES USED IN CENTRAL EUROPE

BY ERNEST TSCHUDIN

Bees are not particular about the kind or shape of their home, provided it affords sufficient shelter and room for building combs. This fact is confirmed by the many kinds of hives used. Almost every material fit for making receptacles has been used for hives — earthenware, basketwork, cork, straw, wood, etc. Of these materials straw has been the most popular for a long time in Germany, Austria, and Switzerland; and even now, after the frame hive has been known there for a lifetime, straw skeps are still in use to some extent.

In the majority of cases the skep owners are farmers who keep a few colonies and are satisfied to reap what they can get with

least trouble and fewest stings. Usually a specialist—a practical beekeeper—has to visit the skep owners in his neighborhood in early spring to cut out the surplus honey. I still remember such a scene I witnessed in childhood on my grandfather's farm in northern Switzerland. The skeps were taken from their shelves in the beehouse, and turned upside down. The bottom-board was lifted, smoke from the pipe was blown in, and the operation began. The skeps in question have a diameter of about 20 inches, and are about 12 inches high.

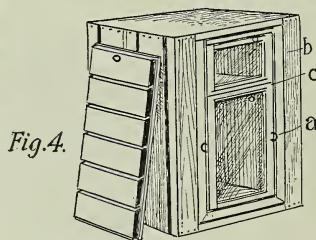
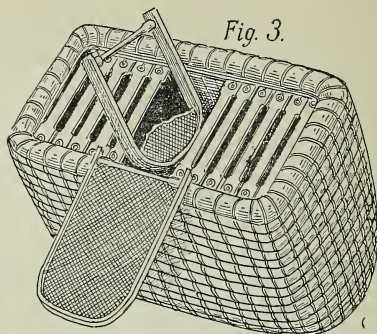
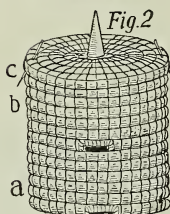
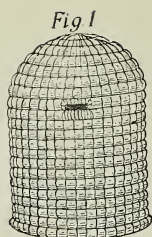
As the combs do not reach quite down to the bottom-board they remain undisturbed



when the latter is removed, and the combs may be examined with more or less ease. Supply-dealers even offer a comb speculum, a small mirror to be introduced between the combs for examining the cells; also various classes of introducing - cages, specially for skeps, are manufactured. The queen may be caught by drumming off the swarm, etc., which proves that the skep is rather handier than the common box hive, which, in the regions mentioned, is almost unknown. It should also be borne in mind that straw is one of the best insulating materials. But even the practical beekeeper, able to get every drop of nectar by careful management, would be at a loss, as too much honey is to be converted into wax, considering the good price that honey brings in Europe. Under normal circumstances few extensive beekeepers figure among the skeppists; but just here comes the exception. In the most productive honey region of Germany, the Luneburg heath-country, and in a part of Holland, the typical hive is a skep, Fig. 1, with entrance above.

The size and shape of the skeps in different regions vary greatly. Fig. 2 represents a variation—the Kanitz hive of eastern Prussia. It consists of two or more interchangeable bodies and separate straw cover.

To avoid the combs being built to the cover,



Varieties of the skep.

top-bars (carriers) with comb starters are placed in the upper story.

A straw hive of peculiar shape, but adapted to the principle of the modern frame hive, is the "bogenstuelper" invented by Gravenhorst, who died in 1898. This hive contains twelve to sixteen frames, and is especially in favor in northern Germany. Fig. 3 will give the reader an idea of it. The other modern hives are, of course, made of wood.

At the convention of the German and Austrian beekeepers at Cologne in 1880 there was adopted a standard measure for

the two countries, and the following size of frames for the brood-room was declared as standard:  $8\frac{3}{4}$  inches wide and 14  $\frac{9}{16}$  inches high; frames for honey-room half the height; dimensions of hive in accordance with bee-spaces. Fig. 4 shows a standard hive from the rear, the door being removed so that some of the empty frames are visible in the brood-room (a) and the honey-room (b). The frames hang in rabbeted cleats in a transverse

Fig 7

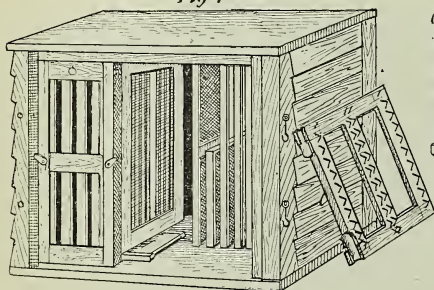


Fig. 5



Fig 6

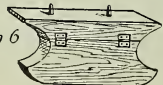


Fig 8

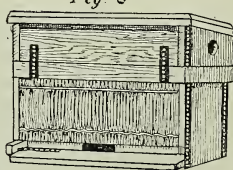
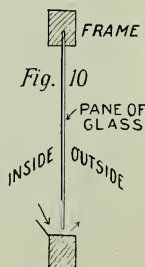


Fig. 10



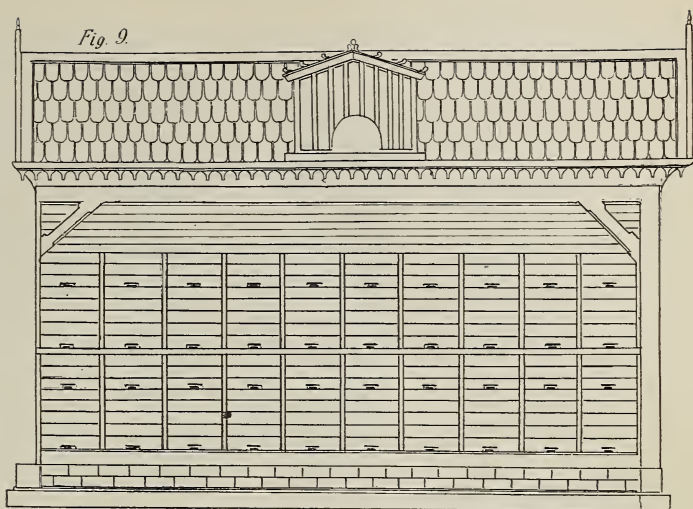


position; or, to understand it more clearly, imagine a Langstroth hive with firmly fixed cover, front entrance also closed, instead of which a new entrance is opened at the right side (being now the front), and the left side made removable (door, now the back end of the hive). That is, in short, the principle.

To operate the hive, one frame after another has to be taken out at the back, for which purpose special tongs are in general use. To put the frames in place again, they are simply pushed forward; and it is, therefore, indispensable that every frame be provided with a spacing-nail or a metal spacer, of which there are many kinds.

To American readers this system might seem impractical; but most beekeepers who are familiar with it are satisfied with the arrangement. On the other hand, one of those beekeepers once expressed to me his disgust for hives to be treated from the top. "The whole colony is aroused when the cover is lifted," he said. Indeed, in a few points the system shows some conveniences—in the first place, its fitness for the bee-house.

Altho the hive was declared standard, the length was not prescribed. Usually it is made for 12 frames in every story.



A bee-house of primitive design. The fronts of the hives themselves form the side of the house.

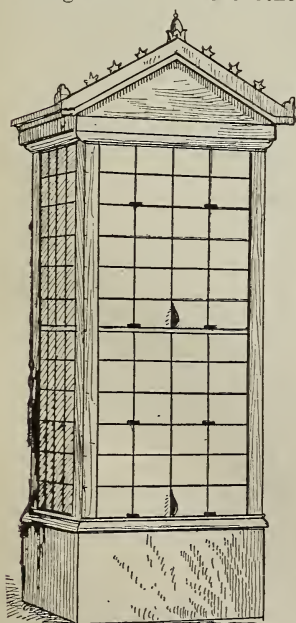


Fig. 11

A kiosk for a small number of colonies.

In some regions the  $1\frac{1}{2}$ -story hive is considered too small, and a hole is provided in the top, to be opened during a good flow when a special super is placed above. When accommodated in a modern bee-house this, however, is not possible, and then three-story or even four-story hives are preferred. In the latter case the upper rooms are also provided with an entrance; and after being separated from the lower story by a division-board one can lodge a second colony, for instance, in a poor season or during winter.

The door in the rear is either removable or moves on hinges. Then follows next in the newer hives a window (not seen in the figure), the frame of which exactly fits the interior of the hive, and that can be pushed forward when contracting the room. Sometimes the glass is replaced by wire cloth, which has the advantage of ventilation when, in summer, the back door is left open. Lately a space of an inch is observed between the hive-bottom and the bottom-bars; and in lieu of a division-board above the lower story only a beespace of  $\frac{1}{4}$  inch is left.

The entrance is often guarded by a tin slide. One of the many different styles is shown in Fig. 5. For small entrances, a correspondingly small alighting-board is in favor (Fig. 6), one part of which can be put up to protect the entrance from wind or sun in winter.

In spite of the existence of a standard hive its adoption is not general, and never will be. After the same principle and disposition is made the hive of Baden (but

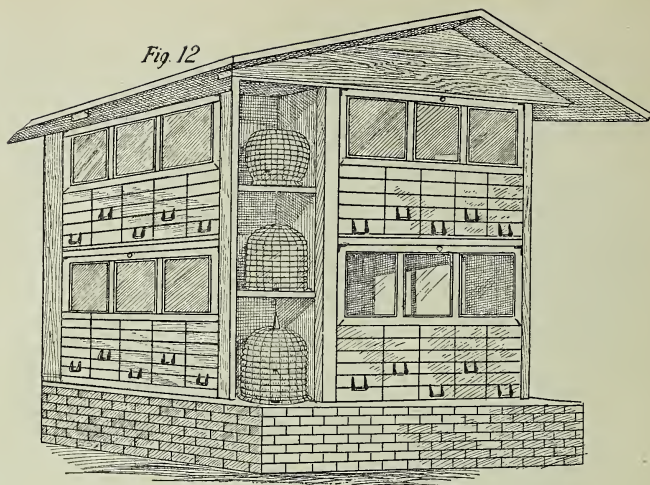
with larger frames). The Vienna hive differs little from the former. The Swiss hive has wider frames, etc.

This general principle (operation from the back and with transversal frames) is maintained in some other kinds of hives which differ more or less in other points. For example, the Alsatian hive (only one story, with special super to be put on top; the Suabian hive (two stories); the Thuringian hive, modified by Rev. Mr. Gerstung, can be manipulated from the top, etc.

However, contrary to the opinion of many beekeepers, some brethren of the fraternity found it an inconvenience to have the frames transversal with the opening, which idea, many years ago, gave birth to a new hive system usually called "page hive" (blaetterstock), as the frames are exposed from the side like the pages of a book, when opening the door at the rear. Thus the position of the frames is the same as in the American hive, but are supported at the hive bottom by two or three transversal iron bars. Fig. 7 gives a representative of this group, the Alberti hive, with the door removed. Staples that regulate the space between frames and between frames and front wall are driven into the latter. Corresponding staples are also driven into the door or a separate framework (with glass or canvas serving as a window) that must be put in place before closing the hive. Queen-excluder, division-board, etc., adapted to the construction, facilitate the management. A modification is the Dadant-Alberti hive (improved by the Swiss Rev. Mr. Streuli (frames wider than high). The Spuehler hive and the Reidenbach hive are other forms that belong to this group.

The American hives, or similar styles, are also known, and the new edition of a well-established treatise on beekeeping says,

Fig 12



Bee-house designed by Rev. Gerstung.

"The American system has found of late many followers also among our beekeepers." Undoubtedly this would be the case to a much greater extent if it were not for the fact that the traditional bee-house interferes somewhat with the operation of the American hive.

With the hives described, their long list is by no means exhausted; but they represent at least the most typical and important ones in use now. But why this diversity of hives? Amateurship has surely contributed a good deal to it; but it is also a vivid proof of the existence of a progressive beekeeper's spirit.

In France the hives with manipulation from the side are unknown, the most popular modern hive being there the Dadant-Blatt. In arrangement it is almost identical with the American hive except the size of frames (12 frames  $10\frac{5}{8}$  inches high, and  $16\frac{17}{32}$  long). Efforts have also been made to introduce among farmers the economical one-story hive invented by de Layens, a form of the Long Idea hive known in America, with 20 frames  $12\frac{1}{4}$  in. high and  $14\frac{9}{16}$  long. It is made single-walled, back and front, sides covered with a straw mat, Fig. 8.

Basel, Switzerland.

## NOTES FROM GERMANY

BY J. A. HEBERLE, B.S.

### CROP AND MARKET.

The honey crop in Germany this year is good to very good. I have not had a crop like it since 1905. The demand for honey

at a good price is equal to that in years with a short crop. In part, at least, this is due to the fact that no honey (or but little) is coming from Cuba and South America.



## HONEY FOR THE SOLDIERS.

Large quantities of honey are given the soldiers, not only the convalescent in the hospitals and sanitoriums, but also to those in the field and trenches. This has also favorably influenced the general market. Liquid honey is sent to the front in tin tubes, in tin cans, and in cans with aluminum bottoms, and push-in cover, with the sides of pasteboard. Crystallized honey has also been sent in parchment paper, etc. The soldiers appreciate the honey very much. Bread and honey make a fair lunch compared to dry bread. Those poor men (friend and foe) in the trenches get their hot meals very irregularly or not at all, because the "field kitchen" can approach only under cover of darkness; and even at night it is perilous—sometimes impossible.

## NEW OR OLD COMBS?

This question is much discussed at present. By men of experience, extreme views are advocated. Some hold that old combs are dangerous; that they contain disease germs; that a colony on old combs does not develop itself as rapidly as on new ones; that bees do not (or only rarely) swarm from old combs; that they do not build queen-cells readily, etc. Some say that often beginners have unusual success because the bees are building much and are on new combs; but later, when the combs get older, and the bees are not allowed to build freely, the former success is changed to failure.

Others with equal positiveness say that old combs are saturated with formic acid which would kill all disease germs(?). If such an old comb is taken out it spreads a delicate perfume, and this perfume pervades the hive of a healthy colony.

Usually extremes should be avoided in everything as well as in the case of combs. Some have recommended in the journals the renewal of the brood-nest every two, three, or four years. I think it is natural, and correct from the practical point of view, to let the bees build. The extent is influenced by the condition of the colony, the weather, and the locality, or, to be more explicit, by the pollen and nectar furnishing flora within the reach of the apiary. Some few beekeepers use only virgin combs in the extracting-super, believing that old combs color the honey and affect the aroma. I consider it very important to have only first-class worker combs in the brood-nest, and that it matters not so much whether brood has been reared in them for three or six years. I would not suppress, if I could, the rearing of drones; but would, if it were

practicable, have a few of the best queens furnish the drone eggs to the other colonies—at least to such as are, after careful consideration based on close observation booked at the time, found undesirable.

## QUEENS MATED BY DRONES OF THE KEEPER'S CHOICE.

This should be the ambition of the ambitious beekeeper—consummation devoutly to be wished. All beekeepers seem to agree that, were it possible to mate the virgins of the choicest breeding with drones from a colony specially selected for the purpose, we would, in a very short time, have bees that would bring considerably more surplus—to be more definite, double the average. There would be greater uniformity. Nearly all colonies would be populous at the right time, few would swarm, and those that would swarm would do so at a time when it would least interfere with the purpose of the beekeeper. They would be very industrious, and easy to manage.

The first and most important care would be to give them sufficient room to store the surplus during the honey-flow to supplement the winter stores early in case they should be short, and provide ample protection in winter, and especially in the spring, against the inclemency of the weather. Such colonies a beekeeper could, with the same amount of exertion, manage double the number of colonies, and these would average at least twice the amount of surplus of today. That means that a beekeeper with such bees could secure four times as much surplus as at present. If beekeepers want more than that they should try another planet.

Even if the beekeeper should not reach the goal (control of mating) it may be that the conditions under which mating has taken place for uncounted centuries are a sufficient safeguard to exclude inferior males from taking part in the perpetuating of the race, and prevent deterioration.

If we heed the counsel eminent beekeepers have given us as a result of their extended experience and careful observation, we can at present improve our inferior half of the apiary by careful selection of the breeding material on hand that may have been purchased and has been found well adapted to the locality; but we must remember that the conditions under which, from the time the egg is laid until the fertilized queen is introduced to a full colony, especially until the cell is capped, are at least of equal if not superior influence in determining the quality of the young queen rather than her ancestry.

Kempton, Bavaria, Germany.



## THE QUIN-COMPACTNESS HIVE—SUPERS BESIDE THE BROOD-CHAMBER

BY W. F. M'CREADY

A lame shoulder set me thinking of modifying the hive so its manipulation would not require lifting heavier than that done in handling combs of honey, and yet remain as satisfactory in most respects as the ordinary hive.

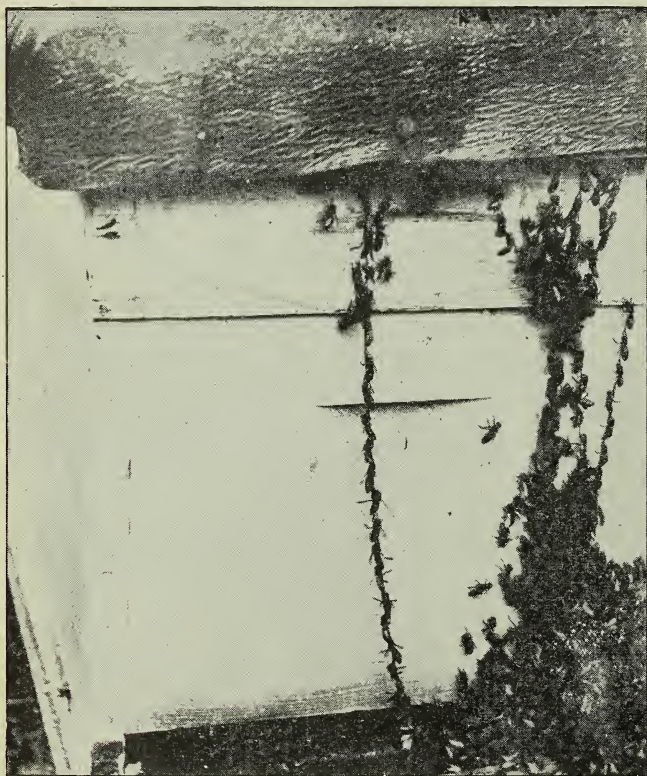
To place the brood-nest and supers in proper relation to each other appeared to be most important. Three supers were set side by side; but to add another in that arrangement seemed not sufficiently compact. Accordingly, two other supers were placed across the ends of the three.

Naturally the brood-nest should be the central one of the group, as there it would be furthest away from its enemies, robber bees, etc. In that position a super could be placed upon the top of the brood-nest and another up against its bottom side. These six supers so thoroly protect the brood-nest as to permit leaving it on its stand outside all winter.

But how pass the bees into the brood-chamber? The final method was to use three-eighths of an inch of almost the entire length of the bottom-board of the front super as a channel thru which the bees could pass from the outside directly into their brood-nest.

To admit the bees from the brood-nest to the supers, V. V. wire strips, cut to special size, were secured, and attached to openings made in the sides and ends of the brood-nest, practically as shown in Fig. 2.

Where one side of each super is removed, notice that frames are hung in the openings made in the sides and ends of the brood-nest, thereby giving that much additional comb area. If another such brood-nest is placed on top, and supers also ranged around it, eight frames nearly the full size of the sides and ends of a super will be added to the capacity of the two-story brood-nest.



A string of bees. They hung from cover to bottom-board without touching the hive-body or super. Photographed by William Bair, of Odon, Ind.

On the lower left-hand corner of the edge of the front super may be seen a small vertical block. In use it fits into a corresponding cavity in the edge of the bottom of the left super. There are sets of these at all corners. They automatically lock the five supers together and prevent their being pulled apart. To make this fastening, two of the supers are placed against the brood-nest, and the other two are lowered one by one into position against it while the locking apparatus of one is engaging that of two others.

To remove a super, it is only necessary to lift it, automatically releasing it from the others.

With the improved hive there is no lifting of heavy supers of honey to set the bee-escape board under.

It is only necessary to lift the super-cover and place a division-board containing a bee-escape at the side next to the brood-nest. Nor must one do heavy lifting in the removal of honey unless it is desired to take it all away by a single operation. In this case the super can be removed from its position, and an empty one put in its place.

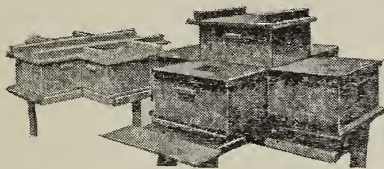


FIG. 1.—The hive assembled.

At the beginning of the season last year, a colony which had just been robbed out, and probably a thousand or more of its bees killed, was placed in the improved hive, without any stores, and by the end of the season it had overtaken and excelled in all respects the best of other colonies in ordinary hives.

This season, to give it a different test, the first swarm was placed in an improved hive; and on the same day and for the next few following, swarms were put in ordinary hives, under otherwise similar conditions. The last time these swarm colonies were examined the one in the improved hive was found to have gained ten combs in honey production over the best of the others in the ordinary hives.

To summarize, this hive is: (1) The only single-walled hive having its brood-nest at the center, where it naturally should be. (2) It is the only one of great capacity, each part of which has its separate cover, etc.—the maximum of convenience with the minimum of disturbance in its manipulation. (3) It is the only one giving as much or more comb area in eighty-eight supers as is to be had in a hundred supers of other makes of the same size. (4) It is the only one in which ten supers can all abut directly on the brood-nest. (5) It is the only one in which, on account of all the surfaces of its six sides being used for abutting supers, is perfect in its compactness. (6) It is the only one which can be used to protect itself against cold weather during the winter. (7) It is the only one which goes a long way toward being completely robber-proof.

Before seeing the photographs of the hive, Mr. H. H. Root, managing editor of *GLEANINGS*, thought "the connection between the brood-chamber compartment and the supers is so slight that the bees might prefer to clog the brood-combs with honey

before entering any of the other compartments." Again, that "on cool nights they would desert the surplus apartment entirely."

Referring to Fig. 2, it will be seen that the connection is the reverse of slight, the openings in the sides and ends of the original brood-chamber being so extensive that only the margins are left to hold it together. I had thought about it somewhat as Mr. Root had; and therefore, not to discourage the bees, I gave them free access to only one of the supers, excluding them from the other three by means of division-boards with but a single bee-space aperture between them. But when I next opened the hive, I was surprised to find work being done vigorously in two or three combs of each of the four supers.

From the results of this hive during the two seasons, I think the idea that cool nights would affect it is erroneous. I once resided in a house which had one very large, low-ceiled room in it. During the winter the temperature in that room was always more equable than in other even much smaller rooms with high ceilings, the heating apparatus in the different rooms being similar. The improved hive may be compared to the low-ceiled room and the tiered-up ones to the high-ceiled. The long-channel entrance may also soften the air coming in. This can be readily appreciated by those who have been in tunnels of coal-banks, and noticed the total absence of atmospheric disturbance due to outside weather conditions.

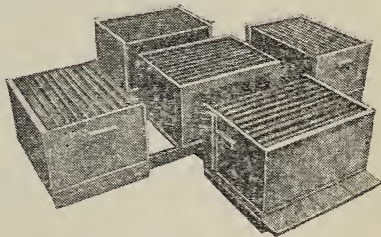


FIG. 2.—The hive taken apart.

Mr. E. R. Root, editor, objected that: (1) "It would cost a good deal more to make a hive of equal capacity on this plan than it would on the tiering-up plan." I admit there would be the costs for the additional covers and bottoms; also for a few cents' worth of wire netting of worker-bee-size mesh with which to cover the openings in the sides and ends of the brood-nest. But I claim that these costs would be almost immediately repaid, over and over, in the added comb area of twelve or more per cent given to each super; in being able to manipulate each super separately with a maxi-



mum of convenience to the operator and minimum of disturbance to the rest of the colony in the other supers; and in the total absence of necessity for heavy lifting.

(2) "Your hive-stands would cost considerably more. In northern climates the stakes after they have been used will be moved around in all directions by the frosts or the freezing of the ground. The hives would have a tendency to pull apart."

Stakes were not used with the hive-stand; but provision had been made for legs for it, attached to its frame in such a manner that they would fold up against the latter, permitting of shipment of the light strong hive-stands in the flat in bales at small cost. When the legs of these hive-stands are set on bricks, the hives will not get out of alignment nor pull apart.

(3) "I doubt very much whether you would be able to get a queen which would be prolific enough to fill not only the four side supers but the brood-nest as well with bees. It is very seldom that we have a colony strong enough for anything of this kind (filling four extra supers with honey). I am afraid you would have all kinds of trouble with it in the North. You are contemplating four extra supers."

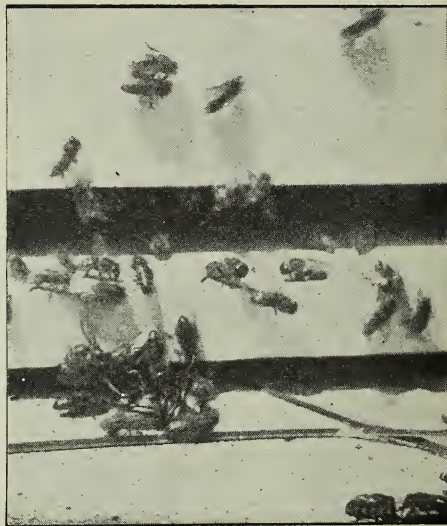
Replying to the last part of this first, if I get a good long season and a black-mangrove flow, I can fill a two-story brood-nest and ten supers placed against its six outside surfaces; altho I presume that generally the bees will be mostly clustered in the brood-nest and at the points of unfinished work. I anticipate no more trouble with the improved hive in the North than in the South. If supers are not lacking, the weather warm, and the colony strong, simply furnish the latter with brood-nest and four supers, and, when these are filled, provide more supers, as described elsewhere.

If the colony is not strong, nor the weather sufficiently warm, I would place close-fitting division-boards in the supers,

just outside the combs in which the bees were working, and thus provide them an ideal workshop in and around the brood-nest. If I were short of supers I would tack covers over the sides and ends of the brood-nest and start the colony in that alone. When more room is needed, one side or end could be uncovered, a super placed against it and the two held together on the hive-stand by means of a few nails driven into the latter at edges of the supers, and this plan followed until the five supers were there to be locked together by each other.

As I have not had experience in the production of comb honey, I suspect some of the methods would have to be considerably modified for that work.

Estero, Fla.



Bees removing dead stag beetle which they have dropped to the hive-stand in front of the bottom-board. Workers can be seen fanning, and drones sunning themselves. Photographed by Frank C. Pellett, Atlantic, Iowa.

## WINTERING BEES IN VIRGINIA

BY FRANCES W. GRAVELY

After reading what Dr. Phillips has to say about the wintering of bees, and from the experience I have had along that line, I am under the impression that it will pay the beekeepers of Virginia to experiment to see whether it will pay them to continue to winter their bees in the old way—that is, just leave them to winter if they can. I know bees *can* lie wintered in Virginia without being protected; but I believe it

would more than pay the beekeepers to give their bees proper protection in winter. I ally the bees will be mostly clustered in other outdoor protection is the best for this locality; and I am expecting to give the Holtermann case a thoro test next winter.

In the fall of 1913 all of my bees were weak from making a heavy increase, and I wintered them in ten-frame hives on six combs with division-boards on each side,

and the space on each side filled with packing; and they came through the winter in fine order and built up to full colonies by the time our earliest flow began. But in the fall of 1914 my colonies were all very strong, and I gave them no protection at all. The following spring they came out weak, and were a long time in building up. I lost more than enough honey to pay for cases and packing. It was a mild winter at that.

The bee business has not made the progress in this section that it should. There are many bees scattered around on the farms, and they are kept in old log and box hives with but very little profit. It is hard to convince the farmers that, with the proper equipment and management, they can make money with their little apiaries. I am proud to say we have a few successful apiarists, and have prospects of having more.

There are many beginners. I am inclined to believe some of them will make a success. I hope so.

Those that are studying the business, and reading the bee journals, I think are making good headway; but there are some who think all they have to know is how to hive a swarm and take the honey from them when it is made. The consequences are they don't have much trouble in taking the honey.

There is no reason why Virginia should not be one of the leading states in the Union for the production of honey, as we have about a three months' honey season, and there is a large number of the best honey-yielding plants such as tupelo, locust, poplar, persimmon, sourwood, blackberry, and different kinds of clovers, and many other small plants which help a good deal.

Stockton, Va.

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## HEARTSEASE TURNS FAILURE INTO SUCCESS

BY W. S. WILLIAMS

Last fall I put up in winter quarters 83 colonies of bees which were unusually heavy from the fall bloom of aster and smartweed. When I went over them in April there were twenty-nine dead with from two to four combs of honey. The entire inside of the hives was plastered with stain. They still kept dying till reduced to twenty-six. All seemed weak until late. There were no swarms until the middle of June, and only about five until in July. They then got very strong, but did not go into the supers to any account until buckwheat bloom.

They then just rushed things and started swarming in earnest. Eighteen of the twenty-six that survived swarmed twice, and the second swarms were seemingly as large as the prime swarms. Never in all of my bee experience have I seen colonies build up

and overflow so quickly. They kept up the swarming until Sept. 2. They all filled up their brood-combs, and some which swarmed the last of August gave me one and two supers of the finest light honey I ever had.

It was all from smartweed or heartsease and aster. It was a wonderful crop. The cornfields and potato-ground were a mass of the heartsease. Some of the wheat-stubble fields produced a late crop of it on account of the wet season. I had a little over a ton of honey from the twenty-six, spring count, and increased up to sixty-five colonies. All are going into winter unusually heavy and strong.

This locality is getting to produce more honey from the fall bloom than from the summer season. Each fall seems to get better, and the honey is water-white and of a very pleasant flavor.

Julian, Pa.

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## A WINTER CASE OR HOUSE

BY L. M. AUTHAN

We winter our bees in long rows. We build a long house, six feet high, four and one-half feet wide, as long as is necessary to accommodate our colonies. The house has doors at each end.

We cover the top with cheap roofing-paper, and the sides with oiled paper. Holes are left in the sides corresponding to

the entrances of the hive. It is possible to make the house a double-decker if necessary. These sheds can be taken apart in 16-ft. sections, and moved whenever desired.

I throw old carpet or any packing material I happen to have over the bees inside, and they are nice and dry. Combs in colonies kept this way hardly ever sweat. Mois-



ture which is so bad for bees is never created in the hives.

I find that bees kept this way come out much better in the spring than by any other plan of wintering. I leave parts of my bees in the house all summer, and find they do well.

I have worked with bees for thirty years, and find there is still much to learn. My own experience favors a compact hive of 12 x 12-inch frames. The colonies keep better and make more honey, one year with another.

Emlenton, Pa.

## TICKLING THE PALATE OF A NATION

While national conventions of beekeepers and writers in the journals of apiculture have been insisting that something ought to be done to boost the sales of honey, it has already been done. While repeated suggestions and plans have been broached for getting articles about honey into the newspapers and magazines, lo! it has already come to pass. It is not too much to say that, at the present time, honey is getting more general unpaid publicity than any other food product.

The *Delineator*, a magazine with a circulation close to the million mark, published in its January, 1916, number three columns of recipes for the uses of honey in cooking. The January number was on sale December 10. The *Delineator* is one of the oldest woman's magazines in the world. It has been called "the most helpful and best loved of all magazines." If the National Beekeepers' Association had purchased this space to fill with matter of similar nature it would have cost about \$4000.

Three columns of recipes calling for honey will appear in the *Pictorial Review* for March, 1916, which is on sale Feb. 10. The circulation of this fifteen-cent woman's magazine is more than a million. The same amount of paid publicity for honey would have cost probably another four thousand.

*American Cookery*, probably the foremost culinary publication in this country, contained in December a recipe for a honey cake. *Good Housekeeping* for the same month has a recipe for "honey fluff." The *Cooking Club Magazine*, of Goshen, Ind., is reprinting the recipes for honey cookery which appeared in GLEANINGS for Oct. 1.

Farm magazines these days are making so many allusions to the use of honey in cooking that it is impossible to keep count of them all. The *Country Gentleman*, of Philadelphia, for December 4 had a note recommending the use of honey in this way. *Farm and Ranch*, published at Dallas, Tex., one of the largest papers of the Southwest, had two columns of honey recipes in their Dec. 11th issue. The *Alfalfa Journal*, of Sioux Falls, S. D., a progressive new paper

which has been mentioned in these columns before, is using from time to time some of the recipes of the Oct. 1st GLEANINGS. Each recipe is illustrated.

If the references to honey in farm magazines are hard to keep tab on, what shall we say of the daily press? Two or three examples are all there is room for. The *Cleveland Leader* for Sunday, Dec. 19, contained half a dozen honey recipes. The *Cleveland News* lately had one for Lebkuchen which requires honey. A few weeks ago the *Plain Dealer* of the same city had a number of honey recipes, as well as suggested menus of which honey was a part. A number of papers had recipes for Christmas candies. Almost invariably the editors included one or more requiring honey. Two weeks ago the Worcester (Mass.) *Telegram* printed two columns of reading-matter on honey, its nature, preparation for market, and distribution.

Domestic-science teachers in the public schools are turning to honey with enthusiasm. The qualities of superior texture and enduring freshness which honey imparts to cakes and cookies are esteemed by these instructors and explained to their pupils. Grocers, restaurateurs, and proprietors of delicatessens are finding honey increasingly popular with their patrons. The number of new honey preparations is increasing rapidly. Witness a new confection recently put out in Chicago, said to be made from honey by a secret process, yet nothing more than bars of granulated honey encased in chocolate.

Here and there progressive bakers are springing new honey foods on the public, and finding them highly popular. A baker in Medina, for example, made up a batch of honey cookies over an original recipe and sold them out the day they were made.

At last honey seems to be coming into its own. How long the welcome publicity it is now getting will last we cannot say; but there is every indication that it will continue to have its "place in the sun" on household pages, in cookery departments, and on grocery counters.

# Heads of Grain From Different Fields



**The Backlot Buzzer**

*The amateur who bought a hive of blacks last year to study their habits has learned more than he figured on. Anyway, he says he's mighty glad winter is here. They are all in the hive, and won't be out till spring.*

## Here's Orthodox Bee-story

Pelham Grenville Wodehouse, prominent writer of fiction, must have been a beekeeper. In his serial story, "Uneasy Money," now running in the *Saturday Evening Post*, he introduces Elizabeth Boyd, the heroine of the plot, as a beekeeper; and in the installment for Dec. 18 it turns out that Lord Dawlish, alias Mr. Chalmers, also at one time worked with bees.

The high-spirited Miss Boyd, resenting Chalmers' presence on her farm, plans to trap the young man in the apiary and get the bees to sting him badly. Part of the dialog follows.

"Elizabeth's irritation became painful. She resented his smile. She hung the smoker on the side of the hive.

"The stool, please, and the screwdriver."

"She seated herself beside the hive and began to loosen the outside section. Then taking the brood-frame by the projecting ends she pulled it out and handed it to her companion. She did it as one who plays an ace of trumps.

"Would you mind holding this, Mr. Chalmers?"

"The surface of the frame was black with what appeared at first sight to be a thick bubbling fluid of some sort, pouring viscously to and fro as if some hidden fire had been lighted beneath it. Only after a closer inspection was it apparent to the lay eye that this seeming fluid was in reality composed of mass upon mass of bees. They shoved and writhed and muttered and jostled, for all the world like a collection of home-seeking New Yorkers trying to

secure standing room on a subway express at half-past five in the afternoon."

She gets him to shake the bees.

"Lord Dawlish watched them go with a kindly interest.

"It has always been a mystery to me," he said, "why they never seem to think of manhandling the Johnny who does that to them. They don't seem able to connect cause and effect. I suppose the only way they can figure it out is that the bottom has suddenly dropped out of everything, and they are so busy lighting out for home that they haven't time to go to the root of things. But it's a ticklish job for all that, if you're not used to it. I know when I first did it I shut my eyes and wondered whether they would bury my remains or cremate them."

"When you first did it?" Elizabeth was staring at him blankly. "Have you done it before?"

Her voice shook. Bill met her gaze frankly.

"Done it before? Rather! Thousands of times. You see, I spent a year on a bee-farm once, learning the business."

## Simmins Starvation Introduction Successful

Replying to Mr. A. T. Rodman's article on page 896, Nov. 1, I wish to say that this plan of introducing is the old Simmins method, described in the A B C and X Y Z of Bee Culture.

I too had a great many failures in introducing this year. The cage plan was a failure, as was also the smoke method. Knowing of the Simmins method I decided to try it, and did, with great results. Mr. Rodman tells us in his article to be sure to introduce the queen after dark; but I killed old queens at noon and introduced by this method thirty minutes later. A flow of nectar was on from the aster, and this may account for my good luck. All of those introduced at noon were accepted.

Altho this is a good method for introducing, like all others we shall have some failures at times. I have never found a method that was infallible, and wish that I could. Better results were obtained this year with the Simmins method than by either cage or smoke method.

Morgan, Ky.

J. E. JORDAN.

## Wintering in Texas, and Other Observations

When one reads so much about packing bees away for their winter nap it makes him smile to think he is not to be troubled that way down in Texas, where the bees fly very nearly every day in the year. Of course we have a day or two now and then when our bees have to stay in. I winter on the same stand from year to year.

I might say my bees are the very best three-banded Italians, the only kind of use for honey production in this section of countrv. Swarms? Yes, I think I had a swarm or so once while I was sick and could not give them proper attention.

My surplus is from horsemint and clover, although there are quite a number of other sources from which our bees draw. I raise my own queens, and think I get better results than trusting to let the bees take their own will about their mother.

There are very few bees about my yard, and it is a show to lots of folks to see the hive opened up and have the queen pointed out to them. A large majority want then to see the "king bee."

I use the standard eight-frame hive, and run them for chunk and extracted honey, and always have more orders than honey; yet I get a good surplus.

Nacogdoches, Texas.

W. S. CHADWICK.



### What Would You Do in This Situation?

I had 150 colonies, spring count. I don't know how old a queen is in the lot except one or two. That doesn't speak well for a beekeeper, but that is the size of it, and what I want to do is to get on the right trail this coming season.

Our honey-flow starts here about the last week in June; but fruit-bloom comes about six weeks earlier, so there is a dearth between fruit-bloom and anything else, tho as a rule there are lots of swarms issuing during fruit-bloom. I am mentioning this so you will know conditions here.

Out of the 150 I have lost fifty, mostly from American foul brood, and I have brought all home, put them in a corral with a windbreak on the north, east, and west. I have rendered all the diseased combs and charred the hive-bodies, tops and bottoms. I have nearly a hundred nice extracting bodies with drawn comb, and several with full sheets of foundation. All are eight-frame hives.

Now, I want to buy one hundred queens next spring, and I want to know when is the best time to get them. What should be done—make nuclei or put them in the old colonies? I want at least fifty new colonies, and I also want a honey crop. As I said, I don't know which queens are old and which are young, and I should like some advice from the more experienced as to just what they would do.

Albuquerque, N. M.

R. E. PIFFLEY.

[Presumably you have about a hundred colonies left. There will probably be a further shrinkage of 15, leaving you 85. Twenty-five of this number, the weaker ones, should be devoted to increase, leaving a balance of 60 good colonies for the production of honey. It is not profitable, usually, to try to run for increase and honey from the same colony; and hence we would make the divisions as proposed. With the 25 you should be able to increase to 50; and if you have had some experience you can make an increase of 15 up to 50. Stimulative feeding should be practiced by feeding half a pint of syrup daily. Young queens should be supplied to the colonies split up into nuclei for the purpose of increase, but don't split to more than half—two colonies from one.

The 60 or 70 colonies run for honey should be made as strong as possible. Be sure to use only strong colonies, devoting all the weak ones or medium-strength colonies to increase. When a colony in an eight-frame hive is strong enough, put on an upper story and add combs and raise two or three frames of brood from below. If you run for extracted honey, you will tier up; but you should keep all brood below the second story; and as the season advances, confine it to the lower story by means of perforated zinc.

If you are sure your extracting combs are free from disease you can use them; but watch all colonies very closely where they are placed, as the disease may break out again.

Get your queens of some reliable breeder at the time you make increase, and introduce them to full colonies and nuclei, following closely the directions furnished by the queen-breeder. By contracting for a hundred queens you will be able to get a reduced price, altho the queens may be sent to you in lots of ten at a time. Don't divide until settled warm weather comes on. If you do it too soon you may lose a lot of good brood.—Ed.]

### Aster Stores Candy Solid

Aster honey in this locality is not good winter feed. If capped over and well ripened it candies solid in the combs. If not capped, the sugar in the honey granulates and leaves a thin liquid in the cells which will sour and make the combs damp. It comes mostly from a small white aster about eighteen inches high which branches out a good deal.

### BEEES EIGHT MILES FROM THE HIVES.

I believe the letters in late numbers of GLEANINGS regarding the distance bees will work from the hives do not reach the limit. When I began taking GLEANINGS in the eighties, a man on the coast of Washington wrote that he found his Italians eight miles from the hives. The bees were on an island a mile from the shore, the island five miles from the mainland, and the bees were found working in the swamps two miles from the beach. The owner of the bees had the only Italians in that part of the state.

At another time I read in GLEANINGS of a man in Wisconsin who followed a line of Italians seven miles and found them across a river in Minnesota. Again, a man in the northern part of New York followed a line of bees six miles and they went over a mountain to the tree.

When "Rambler" was keeping bees in California, near Redlands, he stated in GLEANINGS that his bees did a paying business working on the orange-orchards five miles from the hives.

I believe good Italians will work three and a half or four miles from home if they cannot get honey nearer.

New Hampton, N. Y.

E. D. HOWELL.

### Simple Cure for Bee Paralysis

Paralysis has been the means of reducing our crop to a considerable extent in two or three of our yards for the last few years, gradually getting worse. At first we paid but little attention to it; but the number of colonies affected steadily grew, and the severity of the disease seemed to increase from year to year. We tried setting the hives up on stilts so that the affected bees would fall out and not return. Some have used a tin (five-gallon can or the like), to be buried just in front of the entrance with the top on a line level with the alighting-board. This caught the bees unable to fly; but this year we hit on a plan that seemed to be entirely satisfactory.

With the other plans the bottom-board has been left on, and the sick bees fall on that and not at once away from the combs. Our way now (and it has been entirely effective in curing every colony treated this year) is simply to remove the bottom-board from the hive; get an empty body, old box, or anything that will hold the hive and colony up a foot or so from the ground, and set the hive minus the bottom-board on it criss-cross or any way so that there is plenty of space for all infected bees and dirt to fall away. We tried this on a great many sick colonies this year without much faith; but the results were indeed surprising. From many of these such colonies as formerly we would expect but little if any surplus from, we harvested nearly a normal crop of honey. Of course they must be treated before the force is too badly gone. We left them in this condition until along about October 15, when ready to fix the yards up for winter.

It now remains to be seen if the disease reappears in the spring. If it does, this plan at least saved the crop of honey; and if it does as well each year it will be sufficient. What was the reason that we got honey from all those paralytic colonies?

It seems to be a disease that, to a certain extent, comes and goes, eases up for a time, and then grows worse again. We changed the queens in a few colonies, but also treated them as above, so the experiment was valueless so far as the requeening is concerned.

I don't know how general this disease is; but I do know that it has been the means of reducing our crops a good many thousands of pounds during the last few years. In this locality this is a thing that can not well be overlooked.

Spokane, Wash.

H. E. CROWTHER.

A. I. Root

## OUR HOMES

Editor

Give us this day our daily bread.—MATT. 6:11.

Behold they which are gorgeously appareled and live delicately are in kings' courts.—LUKE 7:25.

In all thy ways, acknowledge him, and he shall direct thy paths.—PROV. 3:6.

I believe it is generally understood that this first prayer implies that God may give us the chance or opportunity of *earning* our daily food by honest work, or the *means* wherewith to pay for the bread, earned by honest work; and as I pen these lines I am thinking of the thousands who are prevented from earning their "daily bread" by the cruel war. I am thinking of the thousands of helpless and innocent women and children who have had their homes, gardens, and fields despoiled, and of the suffering and hardship such as the world never knew before, through no possible fault of the sufferers. Again and again a prayer wells up in my heart, "How long, O Lord, must this injustice continue? and what are the lessons we are to learn by it? and wherein are thy people remiss that our prayers for peace are not answered?"

Just now, however, I have also something else in mind. The matter of daily bread, while we are at *home*, is a comparatively simple one compared with the problem while traveling. Mrs. Root and I travel but little since we are nearing eighty, except our spring and fall trips to and from our southern home. We usually go on a car made up by elderly people near our Ohio home, and the most of these good people carry their "daily bread" in lunch-baskets. We have done this considerably; but Mrs. Root is usually troubled more or less with car sickness, and at such times she says she cannot bear the sight nor even thought of food carried in a hot car, wrapped up and tied up. For this reason, mostly, we have of late years been going into the dining-car. As a rule we now have excellent service on all our roads, and at reasonable prices when we consider the expense of "spotless linen" and neat and artistic table service. Mrs. Root and I usually each make our selection and then "swap" to some extent for variety. On our last trip at dinner (or "lunch") Mrs. Root was fairly well served; but when my order came of "broiled trout," taken from "special dishes of today," I said to the waiter:

"Where is the bread and potatoes?"

"You didn't order any, sir."

"But, my good sir, are not bread and potatoes included in a 60-cent fish order?"

As he shook his head I said, "So there is a new regulation in regard to the high cost

of living,' is there? Here—give me the order." Then I penciled, "Bread, 10 cts.; potatoes, 15 cts.; but while he was gone for them I went over the bill of fare, and found in plain print, "Bread and potatoes included with all meat and fish orders."

As he returned I pointed it out to him.

Now, before any one has time to say, "This is a regular *darkey* trick," I want to tell you that this fellow was so nearly *white* he colored painfully while he took his pencil and marked "free" after the last two items, or at least I supposed he did; but when I came to pay the bill I found the "free" was only opposite the bread, 10 cts. Just one thing more:

Instead of a fair-sized trout for the 60 cts. there was only a small part of a fish, and that by no means first class—nothing like a ten-cent fish delivered in Bradentown.

I have given the full details of the above in order that we may discuss "daily bread" in traveling a little. First a lot of you will say I should have reported him to the head of the dining-car, and may be I should. But who likes to be making "kicks" among a lot of nice people? I once witnessed a "racket" in a restaurant between a waiter and a customer. A third party who sat near asked how much was at stake in the dispute. When told it was only 25 cents he extended a coin and said, "Here! take this and let us have peace." He afterward said he would lose 25 cts. any time rather than get into a "jangle." Perhaps I should add that neither one would accept the quarter, but kept right on disputing. I believe it is pretty universally agreed that where you are only *personally* concerned it is right and proper to "resist not evil," as the dear Savior commanded; but when humanity is likely to suffer it is a different matter. If this waiter is following this as far as he is permitted, day after day, I did wrong in letting it pass.

Another matter comes in here. How could this waiter gain by the transaction? There must be gain for the waiter somewhere or they would not practice it. I have been told that at least on some dining-cars they purchase the supplies and have all they can get out of it. In California I saw a porter or waiter purchase a bag of grapefruit at a station for perhaps five or ten cents each, and afterward serve them at "half a grapefruit, 20 cts." If a customer ordered this, and nothing else, considering the table, napkin, table ware, etc., the price is all



right; but this has nothing to do with evading the printed bill of fare.

Some one else may suggest I should have "tipped" the waiter to start with, and then there would have been no tricks. Very likely; but I don't believe in tips, and a world of good people are back of me.

Mrs. Root suggests he took a look at my *old shoes* that I wear even in traveling, because they are easier, and concluded I was "hayseed," and wouldn't dare say a word, etc.

At this point in my story three things come into my mind. The first is our second text—"Behold, they which are gorgeously appareled, and live delicately, are in kings' courts."

The second is that I am told I was named by my grandmother after the prophet Amos. She was a devout Christian, and, most likely, prayed I might be like him. Commenting on a recent Sunday-school lesson the *Christian Herald* says:

It was good for Amos' preaching that he was a day laborer. Doubtless he often went to bed with the backache. His hands were calloused, and he wore old clothes. But he got far more out of day's labor than day's pay, as Christ's workmen disciples knew how to do.

The third is that, some years ago, the governor of Ohio called on a near relative to help on a commission of three for an important work for the State. He said he was not permitted to offer pay, except necessary expenses. When each of the three sent in items of expense, my relative had among expenses *thirty cents* for dinner in a great city. Said the clerk, "Why, hello! When the State of Ohio is to pay for your dinner, is 30 cents all it costs?"

"I had a nice dinner, and everything I cared for. What did the other two pay for dinner?"

"Only \$1.50 each."

I don't exactly remember; but my impression is the two others had expensive liquors, and let *Ohio* pay the bill.\*

As I have said, this was several years ago. May God be praised, things are different now.

Now, dear friends, I have something pleasanter to tell you about "daily bread in traveling." Had our train been on time we would have reached Bradentown Friday night, and Mrs. Root was impatient to get

hold of our cottage that had been vacant since last May. As we had a couple of hours in Jacksonville I was glad of a chance to call at the office of the Florida Anti-saloon League. I first interviewed (from the outside) the saloons on that long central street. The few that had not closed up seemed very quiet, and I saw notices of liquors sold only in "sealed packages." After some delay because the office had been moved, I stood before the open door of the new office. As it is nearly always "summer" in Jacksonville, doors are almost always open. Well, while I stood in the doorway feeling I hardly knew a single soul in that great city, a lady came forward with such a beaming smile I was forced to laugh outright as I said:

"Why, you don't know *me*?"

"Yes, I *do* know *you*," she replied, as she gave me her hand.

"Well, who am I, any way?"

"You are the great beeman of Medina, Ohio."\*

Then we had a most friendly chat until the State superintendent, Mr. Crook, came in. He gave me full particulars of the great victory for Florida, and I could not but commend his wisdom when he said he was sure it was best to avoid as far as possible fights or lawsuits with the saloon element. The new law has been declared valid, and there seems a general disposition to submit to it all over the state.

Notwithstanding they told us at the ticket office we would get to Bradentown that night the conductor said we would have to stay in *Tampa* over night. Mrs. Root was disposed to be cross about it when told it would be toward Saturday noon before she could get to work "sweeping down the cobwebs," etc. I assured her it behooved us to wait and see if a kind Providence had not something good in store for us. Whenever I am in *Tampa* I try to call at the Crenshaw Bros.' seed-store to talk over dasheen and other new things for Florida. Last May I stayed so long there I almost had to run for over a mile to catch the train, and Mrs. Root objected to my going there this time for fear it would be Saturday *night* before we got "home."

As we stepped from the train after dark, strangers in a strange city, something impelled me to breathe a little prayer something like this:

"Lord, guide our erring footsteps."

I had planned getting a hotel near the station so I might get up very early and

\* It is not the *men* only who, when called upon to do important work for the state, seem to think it the thing to run up a big bill. Recently a woman was sent to Columbus to take charge of some business for a few days. Her bill of expenses included room or rooms at something like \$5.00 a day, and she gave as an excuse that she supposed when our great state called on a woman they expected to give her the best lodging place to be found in the capital city.

\* As she had seen me only once a few minutes three years ago it was a little surprising. She had, however, read these Home papers.

get a little time at the seed-store. I found just back of the station I should say fifteen or twenty rigs and runners for the different hotels. From the whole lot I singled one and asked for a nearby hotel. He replied he felt sure the lady would not be pleased with those near by, but that he would take us in his Ford auto to a nice clean place and bring us back by train time, all for a dollar. Mrs. Root suggested he certainly meant a dollar each.

"No, ma'am. I will give you a nice room, clean bed, and bring you back all for *one* dollar."

While we were on the way I ventured:

"I suppose you don't happen to be anywhere near the Crenshaw Seed Co.?"

At this question he and his companion both laughed as he replied:

"Why, my good sir, our hotel is right over the Crenshaw establishment, as you will see."

Although Mrs. Root and I have paid as much as \$1.50 *each* for staying over night at a hotel in traveling, I don't think we ever had a pleasanter room. Just outside is a spacious elevated porch or veranda running the whole length of two sides of the great building, and this porch contains a beautiful collection of semi-tropical plants and flowers in tubs and boxes. Just over the desk in the office I saw a notice: "Guests taken to meet any train for 15 cts." I tried to have him take pay, since he had entertained us so handsomely, and at such a low price, but he replied:

"Mr. Root, I *agreed* to take you both ways for the dollar; and what I have agreed to do I have always lived up to so far."

How is that for a hotel-keeper?

A word in closing: Was it not a little funny that, out of the fifteen or twenty runners, I should strike just *this one*? and funnier still (if you will excuse the expression) that his place should just *happen* to be where I particularly wanted to go? I had a nice visit with the manager of the seed-house before train time, and the little Ford got us around in ample time, and Mrs. Root got most of the "cobwebs" down before Sunday. Would it not be well for a lot of us to use my little prayer oftener—"Lord, direct our erring footsteps?" *In all thy ways acknowledge him, and he shall direct thy paths.*

#### BOOKER T. WASHINGTON

Their works do follow them.—REV. 14:13.

One of the pleasant things about living to a fair old age is the opportunity it affords

of noting the growth and development of the good and great men and women of the age. When the boy Edison started out near my own home I hunted the papers for everything that was said of him. It was the same with Booker T. Washington. Thru some correspondence I was soon in touch with him—sent him a copy of the A B C book, and made his school a life subscription to GLEANINGS. When his first book came out it was my privilege to give it a notice and a price with GLEANINGS that resulted in the sale, I think, of several hundred copies. No one, white or black, who reads the book can well avoid getting a new inspiration for education. Washington started an apiary, and, for aught I know, it is still a part of their institution. One funny thing about it was (and may be *is*), the colored *girls* took mostly to the bees, and we gave a photo, years ago, of the colored-girl beekeepers. I planned to make his institution a visit, but never got round to it, and now it is too late to see the man of whom we have heard so much. Below are two clippings from the Jacksonville *Times-Union* in regard to his recent death. The first is from the governor of Alabama.

#### HENDERSON LAUDS WASHINGTON.

MONTGOMERY, Ala., Nov. 15.—Governor Charles Henderson today issued the following official statement on the death of Booker T. Washington:

In the death of Booker T. Washington, the colored race has lost its greatest leader. He was a man of unusual force and executive ability, and in many respects rose above the environment of race. In my opinion his efforts toward the development of his race have been of greatest benefit to them and to the entire South. Born a slave, living a life of earnest endeavor, and at his death the chief executive of an institution of nation-wide reputation, created by his own brain and energy, demonstrates to the world the unbounded possibilities open to those whose purpose is to accomplish something and marks him as one of the able men of his time.

CHARLES HENDERSON.

#### BOOKER WASHINGTON.

Few men in the United States had stronger influence than Booker Washington, and we do not know of any one who used his influence more beneficially. There are ten million negroes in the United States, and the man who represented the best that was in this large number, and who had so much to do with cultivating the best that was in them, was, just from that alone, a power in American life. But Booker Washington had influence far beyond his own race. White men, north and south, held him in the highest honor. He will be greatly missed, but he has taught others who will follow in his footsteps.

We place Booker Washington first among the men of his race. Alexander Dumas probably had a reputation that could be better classed as worldwide. Toussaint L'Ouverture showed ability both as a general and a statesman. Maceo was the most successful general, with the possible exception of Gomez, in the war that resulted in the liberation of Cuba, and Fred Douglass was an orator of great reputation; but we rank Booker Washington above all these. Dumas was not counted as a negro at



all by the French, but he would have been so classed in the United States. He was a quadroon. Fred Douglass was a mulatto. Booker Washington lived with and for his race. Fred Douglass married white women.

Dr. Washington was a messenger of peace and good will between the races in the South. Naturally he was considering his own race, but the good feeling that he taught as necessary to the progress of the blacks operated to the benefit of the whites as well.

Only a few years before Booker Washington began to be known throughout the country no one attempted to lead the negro race except in antagonism to the whites of the South. He had no precedent for his gospel of good will, but he urged the negro to count the southern white man as his best friend. His public life extended through several decades, but not one expression was ever quoted from him that indicated any bitterness. Indeed, his whole life was an exhibition of his confidence in the southern white man, and his efforts with his own race were for their advancement in moral and industrial lines, and in these lines he relied largely on the help of the white man of the South, and his reliance was not misplaced.

Hundreds of thousands of negroes throughout the South will be better and more capable citizens of the communities in which they live on account of Dr. Washington's influence, and not one will be worse. The record is one of which both races in the South should be proud.

The above, at several points, touches on his characteristic humility—I might say "Christlike" humility. At one time in his religious experience he said in substance: "I have finally come to a point where I can thank God that I was born black; for how could I otherwise work for the elevation and development of the race unless I was *one of them*, and had shared from infancy their toil and hardships?"

Does it not remind one of Moses, and, later on, of Him who left his home in heaven, came down to earth, was "born of woman," became the carpenter's son—"a man of sorrows, and acquainted with grief;" and finally, without complaint, gave up his life on the cross that *we might live*—yes, *more than that—that we, through him, might have "everlasting life"?*

#### THE MENACE AND ANTHONY COMSTOCK.

On page 911, Nov. 1, I made brief mention of the above; but from the *Sunday School Times* of Nov. 13 I find the *Menace* in three different issues has attacked the life and character of our departed friend. The *Times* answers seven distinct charges at length, and gives proof that every fair-minded reader must accept, not only that the charges are untrue, but that there is not a shadow of truth in any one of them. As an illustration I will just quote No. 5:

5. The *Menace* states that "The least of his offenses was that he permitted his aged parents to die in the almshouse, which is a matter of public record."

In regard to the *truth* of the above, I quote again from the *Times*:

5. The following interesting letter to the Editor from Mr. Comstock's widow, dated October 15, 1915, states the facts as to his parents:

"I am glad to bear testimony to the following facts regarding my late husband, Mr. Anthony Comstock, and his parents.

"His mother, whom he dearly loved, and from whom he learned the principles of pure religion and undefiled, died at her home when he was a boy ten years of age.

"Some years later his father went to England, and little was heard from him for some time. Becoming anxious for his welfare, Mr. Comstock asked a friend to find out about his father's circumstances. He learned that his father had married again, and that four children had been born, and that they were in straitened circumstances.

"Mr. Comstock at once sent money to bring them all over to this country. He took them into his own home and kept them there until I was so near a breakdown that it seemed advisable for him to rent a home for them elsewhere. He continued to support them all, despite his own limited income, until his father died, and then supported his stepmother and her children, assisted somewhat by her eldest son, till her death. One of these sons, Herbert, is a respected business man in Brooklyn. Mr. Comstock's generosity toward this branch of the family was continued until the time of his death."

The writer of the articles in the *Menace* said in his second article: "If you will show me that I am wrong, that any statement of mine is untrue, I will publicly retract and apologize, like any just man and gentleman." The *Sunday School Times* earnestly hopes that *The Menace* will give its many readers the facts as to Mr. Comstock that are here presented.\*

Christian people everywhere will be glad to know that the continuance of the great work of the New York Society for the Suppression of Vice has been well provided for. Its offices are at 140 Nassau St., New York. Among its founders, builders, and present officers, co-workers of Mr. Comstock's who knew him intimately and loved and trusted him, appear such names as Robert R. McBurney, Welcome G. Hitchcock, Morris K. Jesup, Samuel Colgate, William E. Dodge, Jr., Cephas Brainerd, Kilian Van Rensselaer, William C. Beecher, and Josiah Strong. In 1912, at the fortieth anniversary of Mr. Comstock as secretary of the society, the officers of the society provided a larger executive force, including an associate secretary, Mr. John S. Sumner, who is now the acting secretary of the society. During the last three years the society has taken advanced steps, and in 1914 had an executive force of seven. The president, Mr. Fred E. Tasker, and one of the vice-presidents, James M. Buckley, D. D., issued a letter last month announcing these facts, and stating: "A few newspapers have expressed the opinion that dealers in bad books, prints, etc., upon learning of the death of Mr. Comstock, will attempt to be more active in their diabolical trades, not realizing that the society has been preparing to meet any emergency that might occur."

Readers of the *Times* may remember a personal word from its publisher, Philip E. Howard, in the issue of October 16, 1915. Mr. Howard, knowing about the hellish products that Comstock had fought for forty years, had once exclaimed to Mr. Comstock,

\* My good friends, please notice in the above the gentle kindness and Christian courtesy, under most provoking circumstances, and this has always been characteristic of the *Sunday School Times*. The *Menace* has been coming to me for years, both here and in Medina, although I have never ordered it, or suggested exchange. First and last, it has always seemed to me unchristian.

"How have you managed to stand this sort of thing so long?"

The reply was characteristic.

"Howard," he exclaimed, "I never could have stood it unless the Lord had just kept me through it all. I'd give almost anything to forget the stuff that I have to see. But somehow, you know, I have thought of myself as a man standing at the mouth of a sewer, saving boys and girls from falling in. It's that which has kept me up, and God's power alone can explain how I have been able to keep on."

#### A LONG LIFE AND A HAPPY LIFE.

I have always been much interested in those who have lived 100 years or more; but it never occurred to me until just now that we might have a symposium made up from the lives of many people who have acquired old age until the following letter came with a clipping from the *Oregonian*:

Mr. Root:—Here is an article from which I thought you might wish to copy an extract.

GEORGE ROGER CHUTE.

Reed College, Portland, Ore., Oct. 30.

Below is the clipping:

HUNDREDS OF AGED MEN AND WOMEN TELL WHAT TO DO AND WHAT TO AVOID IF YOU EXPECT TO APPROACH OR PASS THE CENTURY MARK.

Practically none of those who have lived to a ripe old age have ever indulged in tobacco, alcohol, or stimulants of any kind except in a small degree. There are only a small number of instances where persons after becoming old indulge at all in any stimulants.

Old persons depend very little on medicine and have never done so.

Most of the old persons were very fond of honey, and have always indulged themselves in it.

The old people, practically without exception, had a weakness for honey. But they did not eat much candy. Fruits, dairy products, vegetables, and honey were used mostly as edibles by the old people.

Comparatively few centenarians ever chewed or smoked tobacco or drank alcoholic liquors, and very few have been even moderate users of them.

Let me make a summary from some of the above. First, "get busy," and keep busy. Have something on hand to explore and develop every day of your life—something outdoors if possible. Keep pleasant. Love everybody, even your enemies. "Do good to those that hate you." Sleep before an open window, and have your face so near the side of the bed that the air you have breathed once will be very unlikely to be drawn back with the next breath. Shun stimulants of every sort, and, I might almost say, *medicines* of every sort. Get into the habit of thanking God *every day*, then "rejoice and be glad," even if everybody else looks sour and cross.

#### "GET BUSY," AND KEEP BUSY.

The following from the *Plain Dealer* voices my sentiments exactly. If this great teeming world does not interest and appeal to you, even if you are over 80, you are to be pitied.

KEEP INTERESTED; THAT'S SIR WILLIAM CROOKES' RULE FOR HEALTH AT 83.

At 83, Sir William Crookes, the scientist, says he does not feel any different from what he was at 40. As to how to keep fit, here is his dictum:

"A good deal of my own present feeling and position is due to the fact that I have always been working tolerably hard and always doing something I take a great interest in, and am enthusiastic about. That, I think, keeps one's mind healthy and in a good state, and tends to keep one going."

#### SHALL THE UNITED STATES INVEST MILLIONS IN ANTICIPATION OF WAR?

We take the following (by the author of "In His Steps") from the *Christian Herald* of Nov. 24:

PASTOR SHELDON ON PREPAREDNESS; AN OPEN LETTER TO THE PRESIDENT.

President Woodrow Wilson,  
Washington, D. C.

Mr. President:—In your speech in New York you are reported as saying: "If men differ with me in this vital matter, I shall ask them to make it clear how far and in what way they are interested in making the permanent interests of the country safe against disturbance."

I am one of those who differ with you very positively on your program of war preparation, and I believe the men of the West generally differ with you. You say, "No thoughtful man feels any panic haste in this matter. The country is not threatened from any quarter. She stands in friendly relation with all the world." If that is true, why all this military program for an enemy we do not possess? In the entire course of your speech you do not mention one single reason for an increased army and navy. You do not name one nation in the world that has any design to threaten or invade our country.

Mr. President, I have lived in the West over twenty-seven years, and within the last year have been in every western state, and faced over one million and a half of the people, and your program of militarism will meet with earnest and intelligent opposition from this part of the country. Much as I would wish, as a citizen who loves his country, to stand by the President in matters of vital concern, I for one cannot and will not uphold you and your advisers in this matter.

Mr. President, you advise men who differ with you "to make clear how far and in what way they are interested in making the permanent interests of the country safe from disturbance."

If the money you and your advisers declare is necessary for military preparation against an enemy you do not name, were to be used in the education of the people and the Christianizing of the world, we could put an end forever to the war-lust of the world. If we took a small part of the people's money which your program will take from the people to buy powder, and put it into a campaign for national prohibition of the liquor traffic, we could prepare our country for a Christian program of conquest over other passions.

If we took the price of one battleship and put it into the building of good roads in one of our states, we could prepare our people for a happier and cleaner and saner life.

If we took a small part of the immense sums your program calls for in the enrichment of munition factories, and spent it in Christianizing Europe after the great war is over, we could once and forever remove even the needless fear of war which exists in this country.

Mr. President, the program you propose to the



people of this country to strengthen the military power of this republic is contrary to the spirit of Christianity. What would Jesus do? Can we imagine him at this crisis in the world's history calling on a nation to spend vast sums preparing itself for war by creating a great army and navy? It is not thinkable. We know what he would do. He would call on the people of this country to give at least a dollar apiece to preach and practice the gospel of justice and brotherhood here at home, and to take what battleships we have and load them with the best of our sons and daughters and send them around the world to evangelize the nation that will be ready for it as never before, and put an end to war by teaching and practicing the principles of the Prince of Peace.

Over against your program, we who differ with you place this program of preparedness. It is more practical than yours. It is the only program which will in the end bring about the brotherhood of man.

With voice and pen and all the influence I possess, I, as one American citizen, will oppose this program of militarism to the full extent of my power, for it represents not the spirit of the Master, the Prince of Peace, but the spirit of the old-world fear and distrust and hate which has kept alive through all the centuries that which the United States does not represent either by her traditions or by her history. After all these centuries of Jesus Christ, we should have learned the lesson which he has been trying to teach us: "They that use the sword shall perish by the sword."

I am very respect fully yours,

CHARLES M. SHELDON,

Central Congregational Church, Topeka, Kan.

At present I am ready to give a hearty amen to every word of the above. I *may* change my mind later, but I hardly think I shall.

## HIGH-PRESSURE GARDENING

### OUR FLORIDA GARDEN.

We reached our Florida home on Saturday, November 6, just before dinner time. Wesley was on hand to welcome us, as usual, but he had a sorry report to make about the garden. I think I was out in the garden before I even entered the house. Everybody agreed it had been the hottest and driest summer that even the "oldest inhabitant," etc., remembered.

"Why, Wesley, you don't mean our valuable stuff is *all* dead?"

"Pretty much, or ready to die."

Jaboticaba, avocado pears, feterita, dash-een, our nice bed of strawberries, etc., and, to top it all, the most of the nice lot of young chickens I spent so much time in raising last winter were *stolen*. It did look dubious for a little while; but I have learned from years of experience that it's never best to be in haste to "imagine evil." There were *some* things the dry summer didn't seem to hurt much, and pre-eminently were the great weeds, higher than I could reach, all over my nicely fertilized beds. I soon found *one* jaboticaba was alive; and by getting away the trash I found all three of the avocados (that cost \$2.00 each) had started to sprout near the ground. The feterita, that is so highly recommended to stand drouth, seemed to be affected with some kind of blight; and as the birds had appropriated about all the grain as fast as it had ripened, it made the whole garden look sorry.

Sixty hens were back in their old places and seemed very well pleased with the new growth of plants all over their accustomed runs. After we found they were being stolen, they (the 60 remaining) were moved over to neighbor Rood's, and Wesley

brought them back the day before. The first day I think we got 4 eggs, but with my management they speedily came up to a dozen or 15, and at 45 cents a dozen they are now (November 23) paying their way and a little more.

In one spot where I left a little sickly roselle plant, that I had no idea would live, stood a great tree 10 feet high and 12 feet across, and loaded with "fruit."

"Why, Wesley, do you mean to say that *tree* is the little plant I tried so hard to save?"

"It is the very plant, Mr. Root, and we have a lot more. Just look away down there!"

I could hardly believe my eyes. When almost everything else seemed sick and discouraged my roselle was just booming. We picked a panful and found them not only as good as cranberries, but to *my* notion a *great deal better*. The cranberries have a tough skin that I have always thought indigestible, but nothing of the kind with the roselle. We carried panfuls all around to the neighbors, and they are selling at a pretty good rate up town at 10 cts. per quart. After having them in great plenty at almost every meal for the last two weeks I am thanking God every day for this most luscious and healthful fruit.\* Lest you may think roselle is only another of my "freaks," instead of a "great discovery" along the

\* When I said at dinner, "Sue, I do believe this roselle makes the most delicious sauce I ever tasted," she replied, "Now, don't you go and put that in print, for you have said it so many times it will sound ridiculous."

Well, this is the day before Thanksgiving, and I am sure it is the right and proper thing to thank God for roselle; and if it *is* true that I discover some new thing to be thankful for almost every day of my life, is it really a bad habit to get into? What do you, dear reader, think about it?

line of "daily bread," I quote below from a government bulletin:

#### ROSELLE: ITS CULTURE AND USES.

The roselle plant is adapted for culture in the tropical and subtropical regions of the United States, and should be especially valuable in southern California, Florida, the tropical islands of the United States, and in the Canal Zone. It is used in the South very much as the cranberry is used in the North, and is especially valuable for the making of jellies.

The name in Florida, "Jamaica sorrel," is evidently an indication that the plant was introduced from Jamaica—at what date the writer has been unable to ascertain—but it was probably not extensively grown in Florida before 1887, as P. W. Reasoner does not refer to it. Harcourt does not speak of it.

In Florida, as in California, those who have tried the roselle have nothing but praise for the plant, and considerable interest in it is manifest; but its culture on a large scale has not yet, to the knowledge of the writer, been undertaken by any one.

The assumption by Royle that the name roselle is a corruption of the French word "oseille" (the equivalent of the English "sorrel") seems very probable. In the evolutionary stages the name has at different times been spelled "rouelle," "rozelle," and "rosella."

The fruit is seen at present in local markets only, and is sold by the quart. Its excellent qualities for making a sauce so closely imitating in flavor the cranberry as to deceive the very elect are not well known to the public or it would be a formidable rival in the South to that fruit, on which transportation charges are necessarily high owing to the great distance it must be transported. The crisp and juicy appearance of the roselle is diminished by being too long in the hands of the dealer, but this does not indicate deterioration of its useful qualities.

#### SUMMARY.

The roselle is an annual from the Old World tropics.

It is extremely sensitive to frosts, and can at present be grown for its fruit only in tropical and subtropical countries.

Being easily cultivated when the climate is favorable, the roselle should be in the garden of every family; and on account of its excellent qualities for making jellies, jams, etc., it is certain to become an important plant in the manufacture of those products.

The young stems also make good jelly. For such use the plant can be grown almost anywhere in the North or South.

By proper methods of breeding it is possible to obtain strains with larger calyces. Probably earlier-bearing races can also be obtained by careful selection of the earliest-flowering plants.

To save many inquiries as to where to get seed, I am going to do some free advertising by giving the advertisement as I found it in the *Florida Grower*:

Roselle—the lemonade plant, is a wonder; easy to grow; resists drouth; makes the finest jelly; its pods make a drink similar to lemonade. Send 15 cts. for seed and instructions. Mrs. H. G. KAY, Route 1, Box 58, Pasadena, Cal.

My seed came from the above source.

When the weather is very wet there is apt to be trouble with mildew, but the past summer here seems to have just suited it.

The above illustrates that certain things

grow all right during the Florida summers, while there are many things that are sure to be failures.

*Later.*—When you cut up oranges for the table, put with them stewed roselle sauce, half and half. I like this better than any other combination sauce.

We have now for the first time grapefruit of our own growing; also oranges and tangerines, delicious papayas, pineapples, etc. Although our strawberry-bed died out, we got from neighbor Rood forty plants with a good lot of soil with each plant, and set them out so not a leaf has wilted. This is possible only when you can get good strong plants near by. We brought so much soil with each plant that the forty plants made quite a wheelbarrow load. These plants, with care, will probably be bearing in January. Over an inch of rain, scattered over three days, has made everything brighten up amazingly. We have an abundance of sweet potatoes and yams and Irish potatoes knee-high.

#### FANCY IRISH POTATOES—A NEW TRICK.

In one of our agricultural periodicals a writer advised thinning out the potatoes in a hill to a single stem, in order to get all large potatoes, evidently forgetting or ignoring that Terry's A B C of Potato Culture has for its main feature "cutting to one eye," and it has been advocated more or less for forty years. The above article advised throwing away the surplus sprouts, but right here comes in the "new trick."

Down here in Florida, and, in fact, in many other places, under some circumstances potatoes must be planted *whole*, because, if they are cut, even in halves, they are much more liable to rot, especially in cold wet weather. This is one reason why the seed potatoes in the market are all small. Well, my neighbor Ault makes a bed of three rows of potatoes. The middle row is planted first all to large potatoes. When these are just coming up he digs them up carefully and cuts them to one or two eyes, and fills the rows on each side. Every potato grows—no missing hills—and the potatoes all go right along almost as if they had never been disturbed, and *no rot*, for a potato never rots after it has started to grow. Is this too much bother? Possibly; but down here where sprouted *seed* potatoes cost \$2.25 per bushel, and choice *new* potatoes bring \$2.00 per bushel, the saving of seed and having a perfect stand is quite a figure. You will see by our book "What to Do and How to be Happy," etc., that I did the same thing by starting potatoes in the greenhouse *toward forty years ago*.



# CASSAVA AND THE MANIOCA OF SOUTH AFRICA

On page 471, June 1, and page 559, July 1, you will see that our good friend Thompson sent me some canes or cuttings which were planted here about May 1. I have before mentioned the wonderful growth of

cassava; but this manioc, while it looks exactly like our cassava, has a much larger leaf, a brighter green, and seems in every way a more hardy and thrifty plant than our Florida cassava. We have not yet tested it for table use; but it looks now as if it might prove an acquisition.

## TEMPERANCE

"KANSAS HAS MORE INSANE IN 'STATE' HOSPITALS THAN WISCONSIN."

We clip the following from the *Christian Observer*:

Thirty-two counties in Kansas have abandoned their public farms. According to the latest report of the State Board of Control, 898 paupers were being cared for at county institutions.

The prison rate for the entire country is 121.4 per 100,000 of the population. In Kansas it is 91.1. North Dakota, another prohibition state, does better than that, with 63 per 100,000 inhabitants.

The per-capita liquor consumption in the whole country is \$21. In Kansas it is \$3.04. Kansas thus saves forty million dollars every year directly. The indirect gain is not subject to computation, but is certainly greater still.

Illiteracy is the lowest in the country except in one other state.

Forty-eight counties out of 105 did not send a prisoner to the penitentiary last year.

### LIBERTY IN LYING.

It is well known to those who have looked into the matter that no dependence can be placed upon figures and illustrations used by the liquor people. Their literary methods well illustrate the truth of the familiar saying that figures do not lie, but liars will figure.

A sample of its method may be seen in the use made of statistics. The liquor interests have claimed that Kansas has more insane patients in its state hospitals than Wisconsin in proportion to population. That is true; but they omit to say that Wisconsin has, especially in its more populous counties, a system of *county* hospitals for the insane.

Do the liquor interests really believe that the open saloon would be a good thing for Kansas? Most emphatically they do not. I saw a liquor advertisement recently which claimed that the whisky advertised brings "health, wealth, and happiness." Does any one believe that? Do the distillers of that whisky themselves believe it?

When those opposed to prohibition point to the fact that, in the matter of laws protecting working women, Kansas is behind some other states, do they mean we should infer that the best way to protect the working women of Kansas is to go back to the open saloon?

When they seek, unsuccessfully, to prove that Kansas suffers by comparison with Wisconsin in the number of insane, do they seriously propose the open saloon as a cure for insanity?

"FROM BOOZE TO BUTTER"—"COWS OFFER CONSOLATION."

*Kimball's Dairy Farmer* for Nov. 1 contains a splendid article headed "From

Booze to Butter in Washington," from which we clip the closing paragraphs:

It is a well-known fact that the Bellingham brewery has specialized on pasteurizing and bottling milk, making cheese and ice cream since the town went dry. That the plant has been doing this on a losing scale is absurd to contemplate. Capital does not engage in turning out food products for fun, any more than it turns out beer for the humor there may be in it.

In founding a creamery establishment, buildings are the first essential. Steam-generating plants and refrigerating apparatus are necessary. An office equipment must be had. Teams and wagons and automobile trucks are needed. All these things are to be had in the brewery rendered useless through temperance legislation. The items represent the bulk of the cost in creamery construction. Therefore it is not plain why breweries cannot be profitably converted into creameries, especially when the surrounding country gives a portion, or all, of its attention to dairying. By diverting the money usually spent to advertise beer into channels that will develop dairying, the ultimate profit for the creamery should equal or exceed the profit derived from liquors. All that is needed is to get the milk-cans moving as fast as the beer-kegs moved under the old order of things.

Cows offer consolation to those few farmers who are displeased because of the dryness of their localities because of temperance legislation. Hop and barley growers can depend on cows and other live stock to consume all they raise, and a market via the brewery need not worry them. No people on earth is going to legislate creameries and dairies out of business. Therefore, to feel safe and secure, why not go in for something that will last, and not depend on the whims of humanity? Cows have saved many a farm from mortgage proceedings. They will save the breweries from the scrap-heap when the time comes, and that time is rapidly approaching. That's why the Bellingham Bay and Olympia brewing plants are meeting the situation now, before it is fully upon them, by getting into the milk, cheese, and butter business.

Dear friends of temperance, some of us have wondered why our earnest prayers have not been answered; but is it not a greater miracle to see breweries furnishing milk, butter, and cheese than to see "swords beaten into ploughshares, and spears into pruning-hooks"?

"GOD'S KINGDOM COMING."

No doubt you will be glad to know our county (Bell) went dry Nov. 13, 1915, by a majority of 505. I know A. I. Root will rejoice with us.

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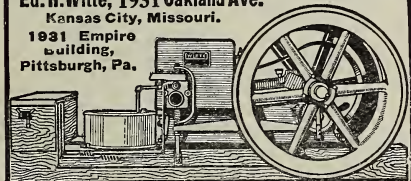
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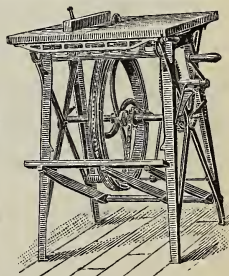
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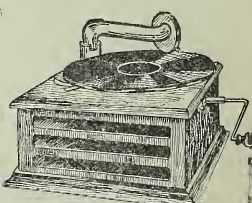
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# 1916 Nursery Guide

**America's Authority  
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Everything for Orchard, Lawn, and Garden described and pictured.

## FRUIT TREES

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## KITSELMAN FENCE



**HORSE-HIGH, BULL-STRONG, FIG-TIGHT**  
Made of Open Hearth wire, heavily galvanized—a strong, durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices.

Here's a few of our big values:  
26-inch Hog Fence - 12 cts. a rod.  
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Special Prices on Galv. Barbed Wire.

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. Write for it to-day. It's free.

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## Free for Testing

A pair of **Red EVERBEARING STRAWBERRY PLANTS** FREE if you will report as to your success with them. Will be load of big, red berries from June to November. We have counted 480 berries, blossoms and buds on a single plant. A postal will bring the plants, also enough seed of the new **CEREAL FETTERITA** to plant a rod square of ground. Also a pkt. of perennial **ORIENTAL POPPY** seed. Send 10 cts for mailing expense or not, as you please. Write today and get acquainted with **THE GARDNER NURSERY COMPANY** Box 749, Osage, Iowa.

## PATENTS

Practice in Patent Office and Courts  
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building  
WASHINGTON, D. C.



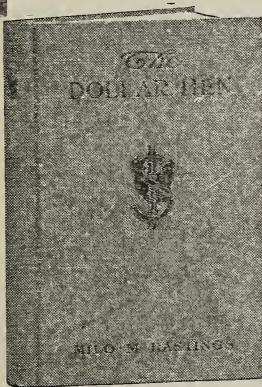
## KANT-KLOG SPRAYER

9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. Send for catalog. Agents wanted.  
**Rochester Spray Pump Co.**  
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# The Dollar Hen

My opinion is that "The Dollar Hen" is not only one of the best books on poultry that we have at the present time, but it is worth nearly as much as a dozen other books. Perhaps this is extreme, but we have very few books that are strictly up to date, and still fewer that pitch right into the superstitions and humbugs scattered thru all our poultry books and journals.—A. I. Root.



This book will be clubbed with GLEANINGS for one year at \$1.35; or, if you have already subscribed a year or more in advance you can have the book for 60 cents.

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BEE  
CULTURE.

Medina,  
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A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog.

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**CLOVER** 5 Per Bu.

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The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from \$50 to \$125 per acre. Easy to start, grows everywhere, on all soils. Write today for our Big 100-page free catalog and circular about unhulled and scarified hulled sweet clover. We can save you money on best tested, guaranteed seed. Sample Free.

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White Blossoms. Biggest bargain in unhulled Sweet Clover this season. Have scarified hulled seed at low prices. Wonderful money-maker. Best paying crop on the Farm today. Builds up worn out land rapidly and produces heavy, money-making crops while doing it. Splendid pasture and hay; inoculates your land for Alfalfa. Keep up with the times. Investigate. It will pay you to get our free samples and prices and big Profit Sharing exclusive Field and Grass Seed Guide. It's free. AMERICAN MULL SEED CO., Dept. 66, 43rd and Roby St., Chicago, Ill.

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Write to Mr. A. L. Rice, Manufacturer, 11 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.



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Get all facts, proofs, particulars—money-back guaranty—also my \$1300.00 Gold Offers—all come with my big illustrated Free Book "Hatching Facts" in colors. Write me today. Jim Rohan, Pres. Belle City Incubator Co., Box 69, Racine, Wis.



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published 144 pages, 220 pretty pictures and beautiful color plates. Complete instructions how to breed, hatch, feed by improved methods, describes our busy Poultry Farm with 53 pure-bred varieties, including Runner Ducks. Lowest price list on fowls, eggs, incubators, sprouters, etc. This great 50c book mailed for only 5 cents. Berry's Poultry Farm, Box 97, Clarinda, Iowa



**60 BREEDS Valuable Poultry Book** 22nd Annual Edition. Fine pure bred chickens, ducks, geese and turkeys—Northern raised, hardy, beautiful. Fowls, Eggs and Incubators, low prices. America's greatest poultry farm. Write today for Free Book.  
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Hardy Northern raised Chickens, Ducks, Geese and Turkeys. Pure-bred heaviest laying strains. Fowls, Eggs, Incubators, all at low prices. Large new Poultry Book and Breeders' Complete Guide Free.  
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**58 BREEDS.** Pure-bred Chickens, Ducks, Geese and Turkeys. Hardy, northern raised, vigorous and most beautiful. Fowls, eggs and incubators at low prices. America's Pioneer Poultry Farm; 21 years exp. Large fine Annual Poultry book and Catalog free.  
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## QUEENS OF QUALITY

The editor of *The Beekeepers' Review* and his sons have 1100 colonies of bees worked for extracted honey. With all those bees working with equal advantage, all having the same care and attention, they have an opportunity unexcelled to ascertain without a reasonable doubt colonies desirable as breeders from a honey-producer's standpoint. Likely, never in the history of beekeeping was there a better opportunity to test out the honey-getting strain of bees than this. Think of it, 1100 colonies with equal show, and a dozen of those colonies storing 250 to 275 pounds of surplus honey this last poor season (with us), while the average of the entire 1100 being not more than 40 pounds per colony. We have sent two of our best breeding queens (their colonies producing 275 pounds surplus each, during the season of 1915) to John M. Davis, and two to Ben C. Davis, both of Spring Hill, Tenn., and they will breed queens for the *Review* during the season of 1916 from those four superior honey-gathering breeding queens. Those young queens will be mated with their thoroughbred drones. Our stock is of the three-banded strain of Italians; also that of John M. Davis; while Ben C. Davis breeds that disease-resisting strain of goldens that is becoming so popular.

By this time you are likely thinking that your strain of bees may be improved some by the addition of this superior strain of *Review* queens, and how you can secure one or more of those superior honey-gathering queens as a breeder. We will tell you. They will be sold to none except *Review* subscribers. If you are a paid-in-advance subscriber to the *Review* for 1916, we will mail you one of the daughters of those famous queens in June for a dollar. If not a subscriber to the *Review* for 1916, send \$1.75 for a year's subscription to the *Review*, and one of those famous queens. Those queens are well worth two dollars each compared to the price usually charged for ordinary queens, but we are not trying to make money out of this proposition, only we are anxious to have every subscriber of GLEANINGS a subscriber to the *Review*, and we are taking this way to accomplish the object. A few of the very first orders for queens that we receive can be mailed in May, but the majority will not be mailed until June. Orders filled in rotation. Have your order booked early and avoid disappointment. Address with remittance

THE BEEKEEPERS' REVIEW, Northstar, Michigan.

## ON THE BOOKSHELF

### The Rockefeller Foundation

We have just received the Annual Report of this society for 1914. It has 214 pages, and is probably the most remarkable report of the kind ever issued, especially as the association is the carrying-out of the plans of one man, and that, too, on a scale so stupendous that perhaps no government on earth would dare attempt it.

In all the large continents of the globe are to be found vast areas where the inhabitants are nearly all afflicted with some endemic malady, which, although not immediately fatal, still renders the subject of attack a pitiable wreck, transmitting the trouble to others. One of the most notable cases of this kind is known as the hookworm disease of the South. It is an intestinal trouble caused by the presence of the hookworm, which causes an enormous swelling of the abdomen, and general prostration. It is caused by the lack of proper sewerage, and going barefoot in the infected soil. The report says:

"The Commission has found more than two million people in the Southern States to be infected with the disease, involving vast suffering, partial arrest of physical, mental, and normal growth, great loss of life, and noticeable decrease in economic efficiency over vast regions."

The report adds that over half a million persons have been treated, and that a diagnosis of the disease can be made with ease and certainty, and that it can be readily cured and easily prevented.

The association in question, for the support of which Mr. John D. Rockefeller has alone contributed the enormous sum of one hundred million dollars, now proposes to grapple these various diseases in all quarters of the globe in the same way our government took hold of the yellow fever in Cuba and a multitude of epidemic diseases in the Canal Zone, and virtually wiped out the last vestige of them.

The results accomplished almost stagger belief; and as these evils are the immediate result of appalling filth, it is likely that, with an increasing degree of intelligence in those benighted districts, especially in Egypt and India, and a dying-out of religious customs which tend so directly to the spread of these loathsome diseases, the duration of human life will soon be doubled in length and trebled in sweetness.

The Rockefeller Foundation, while working on independent lines (for it is independent) yet seems to affiliate readily with all governmental efforts along parallel lines.

We of this country need not repress a patriotic pride in seeing our men of capital and technical skill sending out the X-ray of hope and comfort to the millions of afflicted ones in all climes, and literally trying to "lift up the fallen," against whom the bars of hope have so long been fastened. And with this increase in bodily vigor we may be sure a higher mental and spiritual mode of life will be sought for and found in all nations.

We see no price attached to the book in question; but it can probably be had for a nominal sum by sending to The Rockefeller Foundation, 61 Broadway, New York.

## Classified Advertisements

Notices will be inserted in these classified columns for 25 cents per line. Advertisements intended for this department cannot be less than two lines, and should not exceed five lines, and you must say what your advertisement in the Classified Columns or we will not be responsible for errors.

### HONEY AND WAX FOR SALE

Clover honey of the finest quality in new 60-lb. cans at 9 cts. per lb. J. P. MOORE, Morgan, Ky.

FOR SALE.—White-clover comb honey, extracted, in 60-lb. cans. HENRY HETTEL, Marine, Ill.

Fancy extracted clover honey at 9 cts. per lb. Sample 10 cts. JOS. HANKE, Port Washington, Wis.

FOR SALE.—Clover honey of the finest quality in new 60-lb. cans at 9 cts. per lb. MARTIN CARSMOE, Ruthven, Iowa.

FOR SALE.—Basswood and clover extracted honey in 160-lb. kegs and 60-lb. cans. B. B. COGGSHALL, Groton, N. Y.

Light amber, of good body and flavor; 120 lbs. in case, at 6 cts.; sample, 10 cts. H. C. LEE, Brooksville, Ky.

Clover-heartsease-goldenrod blend. Light amber, best quality, prices right. Sample 10 cts. E. S. MILLER, Valparaiso, Ind.

FOR SALE.—Choice-grade well-ripened clover honey, good grade for bottling; put up in 60-lb. cans. GEO. M. SOWAREY, Cato, N. Y.

FOR SALE.—Three 60-lb. cans light extracted honey at 9 cts. per lb. Sample, 10 cts. H. J. AVERY, Katonah, N. Y.

FOR SALE.—Finest quality of white-clover-basswood blend extracted honey in new 60-lb. cans. State how much you can use, and I will quote you price. L. S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—10,000 lbs. white-clover extracted honey in new 60-lb. net tin cans, 2 in a case, for shipment, sample free. Address D. R. TOWNSEND, Northstar, Mich.

Mesquite and catclaw extracted honey, extra heavy body and exquisite flavor; f. o. b. Cherry Creek, Ariz.; 120 lbs. for \$10.00. Sample, 10 cts. Address BELL APIARIES, Camp Verde, Ariz.

Amber honey, 7½ cts. per lb.; sage honey, 8½; clover honey, 10 cts. per lb. in 60-lb. cans. White comb honey, 12 to 16 cts., box by the case. I. J. STRINGHAM, 105 Park Place, New York.

Special price on a quantity of near-water-white white-clover extracted honey in new cans and cases. Money cannot buy better honey than this. A free sample will convince you.

E. D. TOWNSEND, Northstar, Mich.

Fine new-crop clover and basswood honey at 9 cts. in new 60-lb. cans with 3-in. screws. Also in gallons and smaller, for family and store trade. State quantity wanted. C. J. BALDRIDGE, Homestead Farm, Kendala, N. Y.

FOR SALE.—Water-white alfalfa, white clover, amber alfalfa, and amber fall honey in 60-pound cans or smaller packages. Amber fall honey is of our own extracting, and can also be furnished in barrels. Write for sample of kind desired, and state quantity you can use. DADANT & SONS, Hamilton, Ill.

FOR SALE.—Well-ripened and mild-flavored extracted honey, two 60-pound cans to case; white, 7 cts.; amber, 6; the amber put up in pails, six 10-pound or twelve 5-pound to case for \$6.00. Fall comb honey, No. 1, \$3.00 per case; No. 2, \$2.75; No. 3, \$2.50 per case of 24 sections, six cases to carrier. H. G. QUIRIN, Bellevue, Ohio.

FOR SALE.—Car honey, half extra-fine comb, half extracted, alfalfa, or car extracted. Small lots at \$8.00 per case of two 5-gal. cans; case of 6 10-lb. pails, \$5.00; 12 5-lb. pails, \$5.40; all f. o. b. here. E. F. ATWATER Co., Meridian, Ida.

RASPBERRY HONEY, all left on the hives until thoroly ripened. It is thick, rich, and delicious. This honey is put up in new 60-lb. tin cans. We have it in two grades—pure raspberry and raspberry blended with just enough buckwheat honey to color it. Price, the pure raspberry, \$6.00 a can; the raspberry and buckwheat blended, \$5.50 a can. In one-gallon cans by express, raspberry, \$1.50 a can; raspberry and buckwheat blended, \$1.40 a can. Sample of either kind by mail for 10 cts., which may be applied on an order for honey.

ELMER HUTCHINSON, Lake City, Mich.

### HONEY AND WAX WANTED

Beeswax bought and sold. STROHMEYER & ARPE Co., 139 Franklin St., New York City.

WANTED.—Bulk comb, section, and extracted honey; state price and submit sample. J. E. HARRIS, Morristown, Tenn.

WANTED.—Your own beeswax worked into "Weed Process" foundation at reasonable prices. SUPERIOR HONEY Co., Ogden, Utah. "Everything in bee supplies."

### FOR SALE

HONEY LABELS.—All styles. Catalog with prices free. EASTERN LABEL Co., Clintonville, Ct.

HONEY LABELS.—New designs. Sample free. LIBERTY PUB. Co., Sta. D, box 4E, Cleveland, Ohio.

FOR SALE.—Sweet-clover seed, unhulled, recleaned. HOWARD A. JETT, Brooksville, Ky.

FOR SALE.—New and used Danz. supplies cheap. WM. H. MARTIN, Rt. 1, box 13, Osawatomie, Kan.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. HEALY, Mayaguez, Porto Rico.

FOR SALE.—Circular-saw mandrels and emery-wheel stands. CHARLES A. HENRY, Eden, N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. WHITE MFG. Co., Greenville, Tex.

FOR SALE.—Double-walled two-story beehives with supers, metal roofs; bargains at \$1.00 each. L. F. HOWDEN, Fillmore, N. Y.

FOR SALE.—80 lbs. mixed white and yellow unhulled sweet-clover seed, 12 cts. per lb., any quantity. F. W. LESSER, Rt. 3, East Syracuse, N. Y.

FOR SALE.—Beginner's outfit of six Danz. hives; also two-frame extractor; all at half price. E. M. STRUCK, Rt. 3, Delmar, Iowa.

FOR SALE.—Two 12-inch foundation-mills—one a flat bottom for surplus boxes; one a Root for brood-nest or surplus. Both in good condition; each, \$12.00. Make it yourself. I will tell you how. J. H. NELLIS, Paterson, N. J.

FOR SALE.—Power extractor, new Root six-frame automatic, friction drive; baskets will take Jumbo, Langstroth, or Gallup frames. This extractor is in first-class condition; will sell \$5.00 under cost. THOS. BRODERICK, Rt. 3, Moravia, N. Y.

THE ROOT CANADIAN HOUSE, 185 Wright Ave., Toronto, Ont., successors to the Chas. E. Hopper Co. Full line of Root's goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and other bee-journals; Prairie State incubators. Get the best. Catalog and price list free.



Names of 400 Chicago honey-users, in card index, for sale to highest bidder. See KENNEY, 1729 Monroe St., Chicago, or write E. V. SMITH, Plainwell, Mich.

FOR SALE.—Friction-top pails, 5-lb. size, per 100, \$4.50; 500, \$21.25; 10-lb. size, per 100, \$6.25; 500, \$30.00. Low prices on other sizes in bulk. Also furnished in reshipping-cases. Shipped from Chicago. A. G. WOODMAN Co., Grand Rapids, Mich.

Convert your hives into improved ones—cost slight; 12 per cent or more comb area added to supers; brood-nest and supers about 80 to 90 per cent more closely related; about 15 to 40 times more robber-proof. Better in summer and properly winter-temperated. No heavy lifting necessary. Other advantages. See article on page 30, this number. Address W. F. MCCREADY, Estero, Lee County, Fla.

## MISCELLANEOUS

FOR SALE.—Edison Home phonograph, good as new. Complete with records. Will sell it at a bargain. Write O. W. DRUSHEL, Rt. 5, Millersburg, O.

FOR SALE.—One Remington repeating rifle, short or long rifle, 24-inch octagon barrel, 12 C grade; A No. 1 condition; cost \$16.00. Price \$12.00. W. B. HALEY, Oakwood, Texas.

Hohner Italian organ accordion, ebony finish; panels white maple in fancy scroll work. Has 31 invisible keys with pearl buttons; six sets genuine steel reeds and sixteen bases; organ-like tone; little used. Guaranteed O. K. Cost \$29.75 new. Will sell for \$22.00, including carrying-case. WM. GABRIEL, Scribner, Neb.

## PATENTS

PATENTS THAT PAY. \$600,812.00 clients made. Protect your idea! Send date. Advice and two wonderful Guide Books free. Highest references. E. E. VROOMAN & Co., 834 F, Washington, D. C.

## POULTRY

Poultry Paper, 44 125-page periodical, up to date, tells all you want to know about care and management of poultry for pleasure or profit; four months for 10 cents.

POULTRY ADVOCATE, Dept. 56, Syracuse, N. Y.

\$\$\$\$ IN PIGEONS! Start raising squabs for market or breeding purposes. Make big profits with our Jumbo pigeons. We teach you. Large, free, illustrated, instructive circulars.

PROVIDENCE SQUAB Co., Providence, R. I.

## REAL ESTATE

FOR SALE.—A perfect place for bee-yard; nearly 2 acres, 8-room house. Write for particulars to owner, J. B. HERR, Melbourne, Fla.

FOR SALE.—A very fertile 7-acre farm with apiary of 109 colonies; house, barn, storage, and chicken houses; orchard, excellent water facilities; on market road; No. 1, in small village. MRS. H. R. BOARDMAN, Rt. 2, Collins, Huron Co. O.

ORCHARDS in Famous Fruit Belt of Virginia. Low price, easy terms, on railroad, near market. Write for list. Farm lands \$15.00 per acre up. Mild summers, short winters, good markets. If you will send names of two friends interested in Virginia or North Carolina, will enter your name for year's subscription free to Southern Homeseeker. Write F. H. LABAUME, Agr. Agt. Norfolk & Western Ry., Room 246, N. & W. Bldg., Roanoke, Va.

## WANTS AND EXCHANGES

WANTED.—Second-hand two-frame extractor in good condition. MERTON T. BEEBE, Dover, Ohio.

WANTED.—To supply honey-producers with Atchley bees and queens. They get the honey. Un-  
tested, 75 cts.; \$8.00 per dozen. Bees and nuclei a specialty. WM. ATCHLEY, Mathis, Texas.

WANTED.—A partner in bee business with \$300 and some experience with bees. I have kept bees for 20 years. Don't answer unless you mean business. No liquor user need apply—only a hustler.

HENRY BALDUFF, Beardstown, Ill.

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1916. Our catalog and price list will be mailed to you free. Order early and get the discount.

C. E. SHRIVER, Boise, Ida.

## BEEES AND QUEENS

FOR SALE.—600 colonies well-kept bees. All modern equipment. Write WM. CRAVENS, Rt. 7, San Antonio, Texas.

FOR SALE.—Three-banded Italian queens for season of 1916. Watch for large ad. with prices later. N. FOREHAND, Ft. Deposit, Ala.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1.00; 6 for \$5.00. WM. S. BARNETT, Barnetts, Va.

FOR SALE, or will take partner that is willing to go half, 120 colonies Italian bees, hives, tools, empty hives, 160 acres land, homesteading, well, \$1000 or go half. J. C. HICKSON, Bisby, Ariz.

FOR SALE.—Three-banded Italian queens. Nuclei a specialty. My stock will please you as it has others. Let me book your order for spring delivery. Write for circular and price list.

J. L. LEATH, Corinth, Miss.

FOR SALE.—400 colonies of bees in 8-fr. hives, Hoffman frames, telescopic covers, three locations. 900 supers, 200 extra hives of combs, honey-extractor, etc.

G. FRANK WILSON,  
829 Bross St., Longmont, Col.

Golden Italian queens that produce golden bees; the brightest kind, gentle, and as good honey-gatherers as can be found; each, \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. BROCKWELL, Barnetts, Va.

FOR SALE.—Italian bees, 1 lb. with queen, \$2.25; 1 frame with queen, \$2.00. Queens, 75 cts. each. Safe delivery guaranteed; 30-page catalog with beginners' outfit for stamp. THE DERBY TAYLOR Co., Newark, N. Y. (formerly Lyons).

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. PHELPS & SON, Wilcox St., Binghamton, N. Y.

M. C. Berry & Co., Successors to Brown & Berry, are booking orders for spring delivery. This firm is the largest and most successful shipper of Select Bred Three-banded Italian queens and bees in packages in the South. Write for circular and price list.

M. C. BERRY & Co., Hayneville, Ala.

We are now booking orders for bees in 2-lb. packages, \$1.75; and 3-lb. packages, \$2.50. Young un-  
tested Italian queens, 75 cts. each, or \$8.00 per doz. Bees are free from disease, and safe delivery guaranteed. Orders delivered after April 20. Write for circular. IRISH & GRESSMAN, Jesup, Ga.

**FOR SALE CHEAP.**—80 colonies of Italian bees, Moore stock, 8 and 10 fr. hives; 42 empty supers, full depth; 60 shallow ext. supers; wax-press, extractor, uncapping-tank, smokers, knives, foundation, shipping-cases, etc., for \$300.00 cash. A rare bargain. Speak quick. Address 38392 "A BEE KEEPER," care of GLEANINGS, Medina, Ohio.

**QUEENS.**—Italians exclusively; golden or leather-colored. One select untested, \$1.00; 6, \$4.25; 12, \$8.00. Tested, \$1.25. Best breeder, \$5.00. Early swarms of young bees in light screen cage a specialty. One 1-lb. package, \$1.25; one 2-lb., \$2.25; queen extra. For ten or more, write for price. Also nuclei and full colonies. I am booking orders now, with 10 per cent deposit for delivery March 15 and after. Safe arrival, prompt service, and satisfaction I guarantee. Circular free.

J. E. WING, 155 Schiele Ave., San Jose, Cal.

**FOR SALE.**—1-lb. swarm (shipping weight 3 lbs.) Italian bees, \$1.50, without queen, March 20 or later. Untested Italian queen, 75 cts. after April 10; tested Italian queen, \$1.25 after March 20. No reduction for less than 50. 1 to 49 2-lb. bees in package, no queen, \$2.50 each; 50 to 500 2-lb. bees in packages, no queen, \$2.37. Bred from best honey-gatherers; no disease. Safe arrival and satisfaction guaranteed. We are now booking orders with ¼ payment, balance before shipment. "The early swarms get the honey." We can care for your wants for 1916. W. D. ACHORD, successful package shipper and queen-breeder, Fitzpatrick, Ala., U. S. A.

## SITUATIONS WANTED

Experienced man wants position by April 10 in apiary. Good habits, family of five.

L. B. WOOD, Area, Ill.

Experienced queen-breeder wants work for the season of 1916 with some reliable firm. Prefer raising queens for the market, but will also handle colonies for honey production. Best of references furnished. State wages and full particulars when writing.

N. C. JENSEN, Albion, Neb.

## BEEKEEPERS' DIRECTORY

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St, New York.

Nutmeg Italian queens, leather color, \$1.00; 12 for \$10.00 return mail.

A. W. YATES, 3 Chapman St., Hartford, Ct.

**QUIRIN'S** superior northern-bred Italian bees and queens are hardy, and will please you. More than twenty years a breeder. Orders booked now. Free circular.

H. G. QUIRIN, Bellevue, Ohio.

**QUEENS.**—Imported, three-banded Italian bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, \$8.00; select, \$1.00 each; dozen, \$10.00; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.

You can have your beeswax made into *best quality* foundation; also the wax from old combs or slumgum. We get it all out. On shares or very cheap for cash. New factory. Old liberal terms. Cheapest and handiest transportation for all Northern beekeepers. You always get your own wax back. J. J. ANGUS, 434 Fulton St., Grand Haven, Mich.

## Convention Notices

### MASSACHUSETTS CONVENTION.

The annual Massachusetts convention of beekeepers for 1916 will be held at Amherst, Mass., March 14 to 16, inclusive. This will form the conclusion of the winter school of beekeeping, but the program of the convention is not fully planned. A number of prominent authorities will appear upon the program.

### MONTANA MEETING.

The Montana State Beekeepers' Association will hold its annual convention in Billings, Mont., Jan. 20, 21, 22, in the basement of the Parmly Billings Library. All meetings will begin promptly at 9 A. M. and 2 P. M. respectively. An interesting and instructive program will be carried out. All beekeepers of the state, whether members of the association or not, are invited to attend the convention and take part in the discussion and the question-box. One session will be held in conjunction with the Montana State Horticulturists' Association, which meets in the city at the same time, at which topics of mutual interest will be discussed. Rates of fare will apply if a railway receipt or certificate is asked for when purchasing a single-fare ticket from your local agent and presenting it to the association secretary upon your arrival at the convention.

PERCY F. KOLB, Sec.

Billings, Mont., Dec. 16.

### FREE ONTARIO SHORT COURSE IN BEEKEEPING.

The sixth annual short course in apiculture of the Ontario Agricultural College will be given at Guelph, Ont., January 11 to 22, 1916. It is the purpose of this course to give the underlying principles of bee nature, a knowledge of which is essential to successful bee management. The course is valuable to beekeepers of all degrees of practical experience. It is absolutely free, the only condition being that students reach the college in time for registration at the president's office, Monday, Jan. 10, and attend lectures regularly thereafter. Railroads give reduced rates of fare to persons traveling to take the course.

The instruction will consist of lectures by Morley Pettit, Provincial Apiarist; F. E. Millen, lecturer in apiculture in Michigan Agricultural College, and other authorities. These will be illustrated by lantern slides, and in many cases by the actual objects under discussion.

The Agricultural College will gladly send further information to persons thinking of taking the work.

ADVANCE PROGRAM OF NATIONAL BEEKEEPERS' ASSOCIATION CONVENTION TO BE HELD IN CHICAGO, FEBRUARY 22—24.

### PAPERS AND ADDRESSES PROMISED.

Use and misuse of prime swarms.

Grant Anderson, San Benito, Tex.

Advertising and selling ripe honey.

R. M. Spencer, Ventura, Cal.

Beekeeping in Utah.

M. A. Gill, Hyrum, Utah.

Teaching value of honey in our public schools.

Geo. W. Williams, Redkey, Ind.

Insuring honest values to queen buyers.

Kenneth Hawkins, Plainfield, Ill.

Extending the use of honey in cooking.

E. H. Bruner, Chicago, Ill.

Possibilities and limitations of inspection.

Frank C. Pellett, Atlantic, Iowa.

Establishing a trade name.

E. R. Root, Medina, O.

Some beekeepers of Canada and their apiaries

(with stereopticon slides).

Morley Pettit, Guelph, Ontario.

Importance of bees in pollinating economic plants.

L. H. Pammel, Ames, Iowa.

Out-apiaries.

C. P. Dadant, Hamilton, Ill.

The depressed honey market.

J. E. Pleasants, Orange, Cal.

Beekeeping improvement through agricultural school-work.

Francis Jager, St. Paul, Minn.

Papers (subjects later)—Grover Matthews, Piler, Ida.; J. H. Stoneman, Blackfoot, Ida.; D. C. Polhemus, Lamar, Col.

### IDAHO-OREGON PRODUCERS ELECT.

The annual stockholders' meeting of the Idaho-Oregon Honey Producers' Association was held at Ontario, Oregon, December 7 and 8, and the following officers elected:

C. E. Dibble, president; J. M. Stark, vice-president; P. S. Farrell, secretary-treasurer.

The following were elected Directors for the coming year: C. E. Dibble, Payette district; J. M. Stark, Middleton district; C. W. Nelson, Vale district; P. R. Randall, Nampa district; H. M. West, Parma district; J. F. Weaver, Ontario district; Homer Cheney, New Plymouth district.

One member in each district was appointed to take up the use of honey in cooking with his local domestic-science teacher, and a committee will be appointed to take up the same subject at our next school convention.

P. S. FARRELL, Sec.



## TRADE NOTES

### CATALOG FOR 1916.

We have completed printing the first run of our 1916 catalog, and will mail a copy to any one on request. It will be several weeks before we reach all the names on our list, so that, if you would like to get one before we reach you in the regular list, send a request on a postal, and it will be promptly mailed.

### BEESWAX MARKET.

While there has been no noticeable change in the beeswax market of late, we will from this date, till further notice, pay 28 cents cash, 30 in trade, delivered at Medina, for good average wax. Price paid at our California branches will be 2 cents a pound less.

### SWEET-CLOVER SEED.

Those having a surplus stock of white-sweet-clover seed, hulled or unhulled, which they desire to sell are asked to submit a sample, stating quantity, and the price asked. While there has been a good crop of seed, a great deal is still in the hands of producers because the market price has been much lower than for several years past.

### SECOND-HAND FOUNDATION MILLS.

We have to offer the following list of foundation machines which have been used but are in fair condition. In many cases they will answer as well as a new machine where you have only a moderate output. Send for samples of any mill in the list which may interest you.

No. 0147, 2½ x 6 hexagonal thin-super mill in good condition. Price \$12.00.

No. 0153, 2½ x 6 hexagonal thin-super mill in very good condition. Price \$14.00.

No. 0156, 2½ x 6 hexagonal extra thin-super mill in fair condition. Price \$10.00.

No. 165, 2½ x 6 hexagonal extra thin-super mill in fair condition. Price \$10.00.

No. 0183, 2½ x 6 hexagonal thin-super mill in very good condition. Price \$14.00.

No. 0214, 2½ x 10 hexagonal light medium-brood mill in poor condition; rolls quite badly pitted; will make fair foundation. Price \$13.00.

No. 0222, 2½ x 6 hexagonal thin-super mill in extra good condition. Price \$14.00.

No. 0225, 2½ x 12 hexagonal medium-brood mill in excellent condition; nearly new. Price \$25.00.

No. 0226, 2½ x 10 hexagonal medium-brood mill in fair condition; a few bruised cells. Price \$18.00.

No. 0227, 2½ x 10 hexagonal medium-brood mill; a new machine which does not test up to our present high standard, but a bargain at \$30.00.

No. 0228, 2½ x 10 hexagonal medium-brood mill in good condition. Price \$22.00.

No. 0230, 2½ x 10 hexagonal medium-brood mill in fair condition. Price \$18.00.

No. 231, 2½ x 10 hexagonal medium-brood mill in fairly good condition. Price \$20.00.

No. 0232, 2½ x 10 hexagonal medium-brood mill; not very good cells; somewhat bruised. Price \$15.

No. 0233, 2½ x 10 hexagonal medium-brood mill in poor condition; cells bruised. Price \$14.00.

No. 0234, 2½ x 6 extra-thin-super mill in very good condition. Price \$12.00.

No. 0235, 2½ x 10 hexagonal light-brood mill in good condition. Price \$22.00.

No. 0236, 2½ x 6 extra-thin-super mill in good condition. Price \$12.00.

No. 0237, 2½ x 6 thin-super mill in fair condition. Price \$10.00.

No. 0238, 2½ x 6 thin-super mill in fair condition. Price \$10.00.

No. 0239, 2½ x 10 medium-brood mill, hexagonal cell, in fair condition. Price \$18.00.

No. 0240, 2½ x 10 medium-brood mill, hexagonal cell in fair condition. Price \$17.00.

No. 0241, 2½ x 10 hexagonal medium-brood mill in fair condition. Price \$18.00.

No. 0242, 2½ x 10 hexagonal medium-brood mill in good condition. Price \$20.00.

No. 0243, 2½ x 10 hexagonal medium-brood mill in good condition. Price \$20.00.

No. 0244, 2 x 10 round-cell medium-brood mill in good condition. Price \$14.00.

THE A. I. ROOT CO., Medina, Ohio.

# This Washer Must Pay for Itself

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse. But I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said, "All right, but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse wasn't "all right," and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'll never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way.

So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tubful of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing out the clothes.

Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it doesn't wear the clothes, fray the edges nor break buttons the way all other machines do.

It just drives soapy water clear thru the fibers of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back, and pay the freight too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months, in wear and tear on the clothes alone. And then it will save 50 cents to 75 cents a week over that in wash-woman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line today, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me this way—H. L. Barker, 1620 Court St., Binghamton, N. Y. If you live in Canada, address 1900 Washer Co., 357 Yonge St., Toronto, Ont.



# Quality Quickly

There's the reason why we maintain two western branches and warehouses. The convenience of lower freight and prompter shipments, coupled with the excellence of our bee supplies, have been realized by western honey-producers.

It is unnecessary to talk here about the type of supplies carried in stock at these two distributing points.

## The Proof of Quality

Our exhibit at the Panama-California Exposition was awarded a grand prize and a gold medal.

This is California's  
Decision

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## The A. I. Root Co., Los Angeles, Cal.

Geo. L. Emerson, Manager, 948 East Second St.

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Where the Weed foundation-machines are making perfect non-sag foundation. Send us your wax to be made into foundation. We buy wax too.

Root Redwood Hives.—A sample hive body with cover and bottom KD, \$1.00. Quantity prices on application. We cut hive parts to order.

New machinery for manufacturing hives and frames has been added. Extractors are now shipped "knocked-down" from the factory at Medina.

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## The A. I. Root Co., San Francisco, Cal.

245 Mission Street

We have moved. Office and warehouse in the same building.  
Write for catalog and send us your list of wants.



# "Hats Off to the New Management"

writes a Mission, Texas, customer

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The old reliable line of Root's Beekeepers' Supplies with our new system of business management assures Texas beekeepers of service such as they have never before experienced.

Mr. B. I. Solomon, who is now in charge, has been with The A. I. Root Company for some years and knows their method of doing business.

We intend to carry a large and complete stock of supplies, and we also have our Weed foundation machines in shape to care for all orders promptly.

Give us an opportunity to convince you of our service.

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## Toepperwein & Mayfield Co.

Nolan and Cherry Sts.

San Antonio, Texas